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DOMESTIC ENGINEERING
The Plumbing and Heating Weekly

Walworth Nipple Catechism

Question.—What is the capacity of the factory which makes Walworth nipples?

Answer.—Over thirty millions annually.

Question.—Are these made from old second-hand pipe?

Answer.—No, Walworth nipples are all made from new pipe.

Question.—Any other advantages?

Answer.—Yes, the threads are true to gauge. These nipples are also made in quantity by expert workmen on special machines. The threads are clean cut and careful attention is paid to uniformity of output.

Question.—Any further advantages?

Answer.—The enormous output in normal times insures reasonably prompt shipment even though your requirements are large.

Question.—How about your inspection?

Answer.—Glad you spoke of it. Every nipple is carefully inspected by experts and only those which pass rigid inspection as to quality of workmanship, uniform gauge of thread, general appearance, etc., are allowed to go into stock.

Question.—I have received very oily, dirty, gummed-up nipples from time to time. Is that the kind you send out?

Answer.—No, our nipples go through a special "cooking" process before they are sent out, that is, they are put through a special solution which takes away most of the oil—but just enough is left to prevent rusting.

Question.—How would you summarize the advantages of Walworth Nipples?

Answer.—Walworth Nipples are manufactured from NEW pipe, by modern machinery, under constant rigid inspection, with care for the small points, yet at a maximum efficiency resulting in tremendous production of clean-cut, uniform fittings, threaded true to gauge, oiled against rust and ready for use in all quantities, however small or large.

WALWORTH MANUFACTURING COMPANY

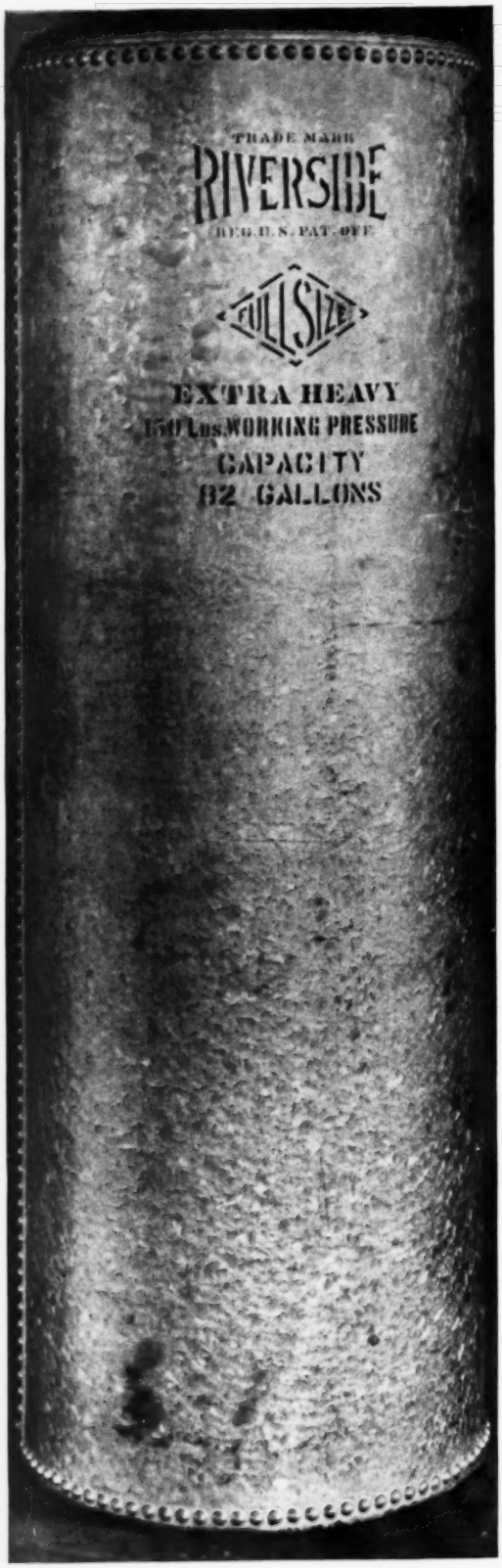
Oldest continuous manufacturers in the United States (since 1842) of a complete line of valves, fittings and tools for steam, water, oil, gas and air. Originators of the Famous "GENUINE WALWORTH STILLSON" Wrench and the "KEWANEE" Union.

BRANCHES:
Boston, Chicago, New York
Philadelphia, Seattle

BOSTON

WESTERN DIVISION:
Offices: Chicago, Ill.
Works: Kewanee, Ill.

Export Sales Agents: Walworth International Co., New York City



Look at the Boiler Before You Look at the Price

The cut herewith was made from the original photograph. It is not a faked picture. Don't you think this big "Riverside" is really handsome?

TRADE MARK
RIVERSIDE
REG. U.S. PAT. OFF.

Riveted and Brazed Range Boiler

Reputable jobbers charge a little more for the "Riverside." Like all good things, it costs a trifle more to make. Remember that when costs are forced down ***out*** goes the quality. We put a fair price on a boiler of 100% Quality. New England Made guarantees Quality.

A sample of the famous "Riverside" Riveted and brazed seam awaits your word.

Riverside Boiler Works, Inc.
The Range Boiler Builders
Cambridge - - Mass.

EDITORIAL

DOMESTIC ENGINEERING

Whole No. 1454 CHICAGO, OCTOBER 23, 1920 Vol. 93, No. 4

WATCH YOUR OVERHEAD.

THE contractor who is not carefully watching his overhead expenses these days will find less profits at the end of the year. It is unwise to take it for granted that your overhead is the same this year as it was last year, and the man who is figuring on that score will lose money. Overhead, like everything else, has been going up. Salaries, rent, light, heat, auto truck supplies, tools, taxes, stationery and printing, advertising, car fares, etc.—all have shown increases. Only the humble postage stamp maintains its pre-war level. It therefore behooves every plumbing and heating contractor to pay strict attention to overhead expenses, watch them month by month, make comparisons with a year ago, and try his best to operate with a minimum of expense without sacrificing efficiency.

Take lost time, for instance, which every shop has to contend with more or less. With wages in most places 25 per cent higher than a year ago, that increased percentage will show against lost labor. Every effort should be made to cut lost time down to the minimum, and if last year's record showed, say, 125 hours, enlist the co-operation of your journeymen in cutting this down one-half. Careful planning—plus the help of the workmen—will bring results. Lost time can be overcome by getting the men out to the job promptly every morning and seeing to it that they do not have to hang around for materials in the shop and on the job. Instructing them to telephone the office for further instructions when they are leaving a job will also promote efficiency.

The question of tools is an important one. Every man should be made responsible for his equipment and admonished to exercise extreme care in its use, to return the tools to the shop after every job, and to hang them where they belong to avoid unnecessary lost time hunting around when needed. Signs should be printed and hung in the shop as a constant reminder to the men to make the establishment as near 100 per cent efficient as possible. Cutting down lost time is one way to cut down the overhead.

The operation of the motor truck will cost less, if the driver is instructed to handle it with care. A truck account should be kept to see exactly what it costs to run it, but this will not be perfect unless the driver turns in all slips for oil, gasoline and repairs. Journeymen also should be told to make a record of everything they buy, no matter how small the expenditure.

The contractor, who actually **knows** what his overhead expenses are, is playing safe and is best equipped to run his business along the right lines. It is a part of his business that he cannot afford to neglect. When he knows where his money is going, he is then prepared to stop the leaks.

JOIN THE A. S. S. E.

THE constructive record of the American Society of Sanitary Engineering is ample proof of the real worth of the organization and should be a strong enough magnet for the goal that the officers have set for a membership of 1,000 in 1921. Membership in the Society is purely voluntary and is open to the sanitary engineer, plumbing inspector, sanitary inspector, superintendent of sewers, master plumber, journeyman plumber, jobber and manufacturer. The big question before the plumbing fraternity these days is standardization, and membership in the American Society of Sanitary Engineering will promote greater results in the field of technical research. What the Society has done in the past is a criterion for the future, and with more members and a larger income, advancement in sanitary science will become more pronounced.

PREPARE NOW FOR CHRISTMAS BUSINESS.

CHRISTMAS is but two months away, and it is timely to give attention to getting your share of the millions that will be spent at that time. It is not too early to start people thinking that the installation of a fine bathroom outfit, a kitchen sink or a gas water heater will give permanent satisfaction in the home. A month from now the newspapers will be announcing all kinds of luxuries suitable for Christmas giving, but if the master plumber gets busy now he will get in the first lick, and that should result in profitable business. An attractive window display can be arranged by the master plumber, and he can combine this effort with circular letters and newspaper advertising and personal calls. Don't wait until the last minute before trying to encourage practical buying at Christmas time.

FORCE *and* FORESIGHT TREBLES LARGE PLUMBING *and* HEATING BUSINESS *in* SHORT TIME

Hard Work, Elimination of Lost Time, Planning Work Well in Advance and Consistent Advertising, Factors in Growth of the Barr & Creelman Co., Rochester, N. Y.

By George Richards

WHEN the late James J. Hill was a young man, that territory lying west of the Mississippi and north of the Missouri was an undeveloped tract of prairie, forest, and mountain country inhabited chiefly by Indians and widely scattered settlers who hunted, fished, and tilled small patches of ground with rather crude implements. Many people knew that there were many thousands of square miles of the richest of soil, excellent timber, and great mineral stores. Many people also knew that the most important step in the development of this territory was the furnishing of good transportation.

Though there was almost any number that had this information, including men of great means, no one did anything about it. The territory was too far away, it was too sparsely populated, and the difficulties of financing and building railroads were too great, at least, that was the general opinion, and had Mr. Hill not attacked this problem, we would probably be still taking our vacations just across the Mississippi hunting buffaloes and other big game. But Mr. Hill was a man with foresight. He saw that the building of railroads through this rich, but undeveloped territory would cause people to flock there, that the more people that went there the more crops they would raise, the more ore they would mine, the more goods of all kinds they would buy, and consequently the more profitable would become the furnishing of transportation. But building a road through this great tract was a gigantic enterprise particularly from a financial standpoint. It meant investing vast sums of money on which no return could be hoped for, for a long time. Of course, Mr. Hill did not have enough capital of his own to even make a noticeable beginning, but there was plenty of capital in the United States to build the road, and he set out to get it. He got it. The road was built. Mr. Hill had the foresight to realize the possibilities in this great enterprise, and he also had the force that convinced others of the soundness of the undertaking so that they were willing to furnish the capital, and the tireless energy to go out and build that road in spite of a thousand obstacles.

This is only an example of success gained by carefully analyzing the possibilities of a situation and having the courage and forcefulness to carry out a decision once made. There are many thousands of other similar cases in every profession

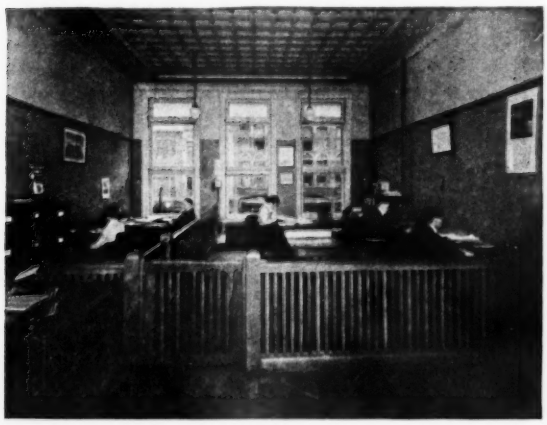
Showroom of the Barr & Creelman Co., Rochester, N. Y.

and every industry where success has attended the ability to look ahead, plan intelligently, and then carry out that plan with persistent effort. The degree of success, of course, varies greatly. Nor are all undertakings as great as that in which Mr. Hill won his fame. Few men have the ability to successfully carry out so gigantic a project, but, on the other hand, there are few men who are not provided with enough foresight and energy to make at least a moderate success, if they will but apply these qualities.

The last few years have put a great many business men through the acid test. The high prices of materials together with their scarcity, and the high wages along with the uncertainty of labor have caused quite a few to just slide along with the times, and in many cases even refuse new business, which would have proved highly profitable, simply because they were too timid. Other men have looked the situation squarely in the face and laid their plans to get the greatest advantage out of it, for they have realized that those, who analyzed the situation intelligently and then had the courage to back up their decisions with untiring energy, would reap a real harvest. To them the difficulties and uncertainties of the times meant great opportunities for almost unlimited success rather than reasons for grumbling and worry.

A few years ago the plumbing and heating firm of the Barr & Creelman Co., Rochester, N. Y., was reorganized and F. J. Weider made general manager. The company at that time was doing around $150,000 worth of business per year, and now it has over a hundred men working on about fifty jobs which total over a half million dollars.

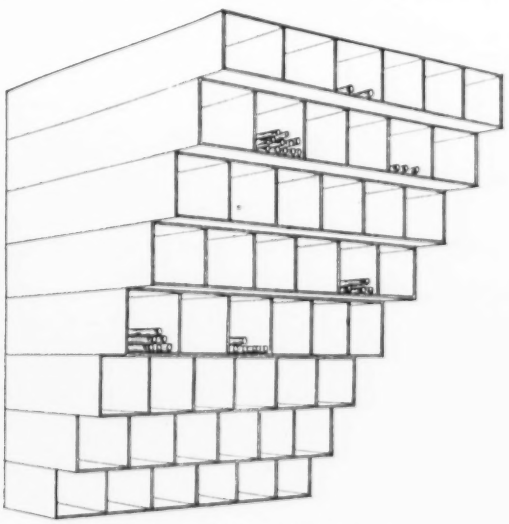
Mr. Weider knew that there was plenty of business for the man who could get it. He also knew that one of the most important steps in the building up of a business is to be prepared to handle it efficiently, and that, in the plumbing and heating trade, this means among other things having a well equipped shop. With labor at an unprecedentedly high figure, the truth of the old saying that "tools are cheaper than men" became more evident than ever before. These things were kept in mind when the new building was added. This addition is 70x80 ft. with two stories and a basement. Pipe is lifted from the truck at the back and carried to the various sections in the basement by a chain hoist and traveling crane, as indicated by the accompanying pictures. Or, the pipe may be carried into the workshop which is on the main floor. Here electrically driven machines cut and thread pipe up to 12 inches. Located conveniently near the cutting machines is a work bench which is nothing if not substantial. It is 15 ft. long and built of 4x12-inch oak planking bolted onto five 4x6-inch cross pieces which in turn are mortised and bolted to 4x6-inch uprights bolted to the floor. The table has an edging of angle iron and at regular intervals are holes bored in the top for all sizes of flanges. "That bench is there to stay," said Mr. Weider, and no one would ever question that fact after seeing the bench. But the bench is no exception to the general rule, for everything is substantially built and securely set.



A View of the Office of the Barr & Creelman Co.

The Workshop of the Barr & Creelman Co.

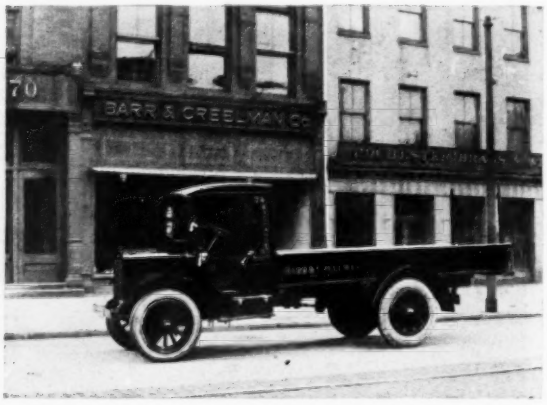
Fitting bins line the walls of the workshop to a height of about 15 ft., and in order to get at the upper tiers, a 2-ft. alleyway of 1¼-inch pipe and 1-inch board floor was built around the walls about 8 ft. from the floor. The ceiling in this room is 20 ft. high and has several large skylights which makes this workshop a large light, airy room well equipped for taking care of a large business. The basement underneath this part of the new addition is fitted with bins and racks for soil pipe and fittings. The steel and wrougnt iron pipe is kept in racks and stalls in the basement of the other half of this building, and over this pipe with a floor 4 ft. above that of the workshop is a room used for a blacksmith shop and for temporarily storing various materials returned from jobs. On the opposite wall of this room is a rack for short pieces of pipe that is rather unusual. It gives the appearance of an overhanging cliff, for the shelf sections for the longer pieces of pipe are in the upper part, and those for the short ones are at the bottom instead of the reverse. The rack is



Rack for Short Pieces of Pipe.

firmly built and securely braced at the top. Its big advantage is that it does not take up any floor space. Furthermore everything in the rack is easily accessible.

The old structure is 25x137 ft. with five stories and a basement. An elevator at the back furnishes facilities for moving goods from and to all floors and the basement. The first part of the main floor is used as a showroom with office toward



Exterior View of the Plumbing and Heating Establishment of the Barr & Creelman Co., Showing also the Company's Motor Truck.

the rear. Directly above this office is a balcony with cabinet shelves for brass goods, etc. A little further toward the rear and along the wall opposite the office is a rack where all brass pipe is kept. Along the wall directly across from the brass pipe rack is a series of hooks whereon the workmen hang their coats, overalls, etc. At the further end of this wall and near the rear door is the stock-keeper's little office. On the wall above the line of hooks is arranged a number of large cardboard signs, which cannot but attract attention. On one of these signs appears in large letters the notice "Clean Up." Another reads, "When in doubt, don't be afraid to ask. Asking questions does not display ignorance." Other signs relate to the use of material, the care of equipment, the matter of pay, etc. "We have certain rules in this shop," said Mr. Weider, "which we insist on having observed, and whenever a man gets careless about anything or asks foolish questions, we point out the sign to him and suggest that he follow the advice appearing on them."

And this insistence upon following certain rules applies in the office as well as in the shop and on the job. There is a definite system for doing everything and that is the way that it must be done. System alone, however, will never get the required results. There must be a directing force from somewhere, and in this case, that directing force is Mr. Weider himself. He is usually at the office by 7:30, and by 8 o'clock everything is in full swing. And here lies the secrets of this company's unusual expansion during the past couple of years.

A few years ago the Master Plumbers' Association in a city of about 75,000 people appointed a committee to find out just what was the average amount of time lost in their shops. The most careful record over a year showed that the master plumbers collected for seven hours' work for every eight hours' pay to the journeymen. Which meant an average loss of one hour per day per man. This included, of course, the loss sustained through poor workmanship which necessitated doing the work over again without additional cost to the man for whom the work was done. But much of the waste of time was found to be due to the inefficient handling of labor, getting the men started ten or fifteen minutes late in the morning, time lost when men reported back to the shop twenty minutes or a half hour before noon and at quitting time in the afternoon with no arrangements made to make use of their time, and also time lost in getting from one job to another.

In the Barr & Creelman shop this loss of time is cut to a minimum. In fact, one may spend hours in this company's shop without ever seeing a single idle man. As the men are completing any job, they telephone to the office and are immediately assigned to another piece of work. If it is necessary to come to the shop for additional tools or material, it is usually ready for them when they get there, and they are immediately sent out to the new job. If, for any reason, it is impossible to send a man out again immediately after he reaches the shop, there is something for him to do in the way of cutting and threading blind ends, straightening up the shop, or work of a similar nature. The shop is always kept in the best of order, and this has much to do with its efficiency, for the men may get their material quickly, they work to advantage, and the systematic orderliness and industriousness cannot but have a favorable effect on the habits of the men themselves.

Mr. Weider was asked what he considered the most essential factor in the building of a successful business. His answer was, "Work, work, work. If you can't get a full day's work for a full day's pay out of a man, you can never make your business the success that it should be. If the man is at fault, let him go and get another, for there are plenty of men who will give a full day's work for a full day's pay, if they are handled right; but very often the fault is not so much with the working man as it is with the man who is employing him. The plumbing and heating business is not like banking, and for the man who is developing a business in this field, banking hours will not do. The man who feels that

(Continued on Page 186.)

First Prize in Ad-Writing Campaign

Fundamental Essentials

—TO—

Health and Comfort

IN THE HOME

Proper Heating and

Up-to-Date Plumbing

Specializing in both of these essentials, we will advise you, as to what changes or improvements should be made, and also give you an estimate of what the cost will be, to have the work done, with the best of materials, by the most expert workmen, in a way, guaranteed to give complete satisfaction.

We accept large and small jobs, and furnish supplies in large or small quantities, at the lowest prices. We are large enough to meet the big fellow on the level, but not too large to treat the little fellow right.

Barr & Creelman Co.

Plumbing Contractors

74 Exchange St.

Written by John F. Haag, 522 Jay Street

PIPING EQUIPMENT *for* INDIVIDUAL POWER PLANTS

Further Practical Information for the Steam Fitter Who is Studying the Needs of Large Isolated Installations

By Ed. J. Lomasney

IN the article under the same title in the issue of June 19th, the heating contractor was urged to devote effort to securing the business of installing the piping equipment of the power plants in his neighborhood.

The question may have arisen as to the extent of the business offered. The opinion may have been formed that this is a declining, rather than a growing, field. Such an opinion would be far from the truth. The isolated plants are increasing in number. It is not our purpose now to enquire into the reasons why or make any comparison whatever as to the desirability or otherwise of the central station versus the isolated station, or to give consideration to any thought that hydro-electric development will some day completely supplant the steam power station. Perhaps it will, but not in our generation. At any rate the fact remains that individual plants are being erected in astonishing large numbers, and the heating and piping contractors install far too few of them.

Power work is very interesting. The past few years have brought out many new devices, and many methods have undergone radical changes. Fuel is mounting in cost, with little prospect of reduction, so that much thought has been devoted to perfecting devices and methods and inventing new ones, to save in the amount used. Some effort has been put forth, with good effect, too, in perfecting methods of handling coal, firing, disposing of ashes, cleaning the internal and external boiler surfaces, etc., which while primarily saving fuel, also considerably reduces labor costs. Fuel though is the principal item, and devices which improve combustion have had rapid development and find ready purchasers. Engine and turbine designers are nearly reaching the limit of performance in a commercial sense. Boilers have become very standardized in construction, with the fire-tube type dominating the field of smaller units, and the water tube the larger. A sharp change has been made in the past few years, however, in the weight of coal burned per sq. ft. of grate and in the steam generated per sq. ft. of heating surface. That is a change dictated not by the mechanical, but rather by the accounting side of the business. It is done with the intention of reducing the size of the equipment, and therefore the initial cost. In a large plant this is a very considerable item and affects the annual depreciation, interest, taxes and maintenance, so that on the mechanical side the development has been in the accessories and in the improvement of the furnace by controlling the admission of fuel and air, both in the amount admitted and the point of introduction.

Some very efficient apparatus have been brought out in the last year or two, and along with them has come refinement in method, all about the plant. This article will treat of the functions of these appurtenances as used in a non-condensing plant, extending the description to those time-tried devices with which all are more or less familiar. It is hoped that the necessary elementary nature of some of the descriptive matter may be taken in good part by those completely familiar with modern power plant construction.

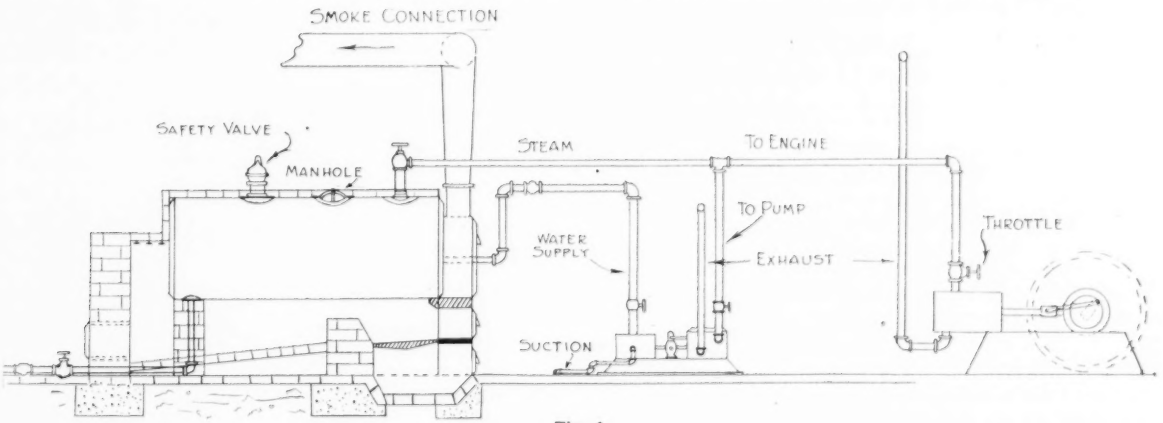


Fig. 1.

In those dear dead days of long ago, when fuel was so cheap that no one had any idea how much of it was burned in the place, a power plant consisted of the very primary essentials: An engine, a boiler and something to get water into the boilers' insides. Fig. 1 illustrates the whole job.

No one knew how much steam the engine used, what became of the exhaust or whether or not the coal was being properly burned; and no one cared. All that was asked of the engineer was that he keep the plant running. He usually had his hands full doing that and about 50 per cent of the

time was spent cleaning fires and 50 per cent making repairs. He was free to do anything he wanted the rest of the time. The owner would never buy anything new, unless the plant blew up and he had to. He felt that he had done his full duty when he bought a safety valve for the boiler, and no one ever knew whether it worked until the annual visit of the boiler inspector.

Now, even a very modest and small installation has a variety of devices for controlling, directing and recording the activities of the plant, and effecting savings in fuel, water, oil, material and labor. Many of these fixtures are more than conveniences; their use is made compulsory by state and city laws.

It is essential that the piping contractor has knowledge of them, what their application is, and to what extent he must strictly comply with laws of state and city, and rules of insurance underwriters. Complying with specifications is not always sufficient. Specifications are frequently incomplete or in error, or he may take on serious obligations by agreeing to the phrase. Comply with all city ordinances, state laws and the rules of the Board of Underwriters. That is a pretty big mouthful to say in such a very few innocent looking little words.

The writer does not hope in this article to cover every contingency, but the devices most in use, and the practice to be followed as affecting the main portions of ordinary non-condensing work will be treated at length. Later articles will enter the much more advanced installations, where the utmost refinement in practice and devices is applied.

Fig. 2 illustrates the plan of a fair-sized power plant in a factory, generating electric power and light and using the exhaust steam for heating purposes. It has in use practically every usual device which will assure its continuous and economical operation. A feature of interest is the balancing of the units and the piping very close to the operating load. A few years ago wider margin would have been allowed. In these days of high prices, however, the initial cost is a very considerable item. Machinery, which is not developing its capacity, or any idle units beyond the bare extra one needed for cleaning and repairing, plays too loud a tune in that grand finale called "yearly overhead," so that a very essential part of any plant design is to provide for peak loads and emergency demands by driving beyond capacity, still retaining the reserve units needed; that must always be looked to; the main consideration, of course, is "to keep moving."

It would be possible, of course, to provide against every possible contingency, but that is not a desirable thing to do. The law of chance operates, of course, in power plant operation, as in everything else. It is not commercially practical to guard against everything; remote possibility of shutdown through accident or interference may, and should be, neglected. Besides, very few plants, indeed, are erected and operated as originally planned; in our day changes and additions are the rule; so that it is better in making any layout to allow for the almost certain working out of other, and perhaps more comprehensive, plans. Do not regard any layout as being unalterably fixed. They seldom are.

The plant at present consists of three 72x18 horizontal tubular boilers, three 125-kilowatt generators, and three 200-horsepower engines. The original design called for four-

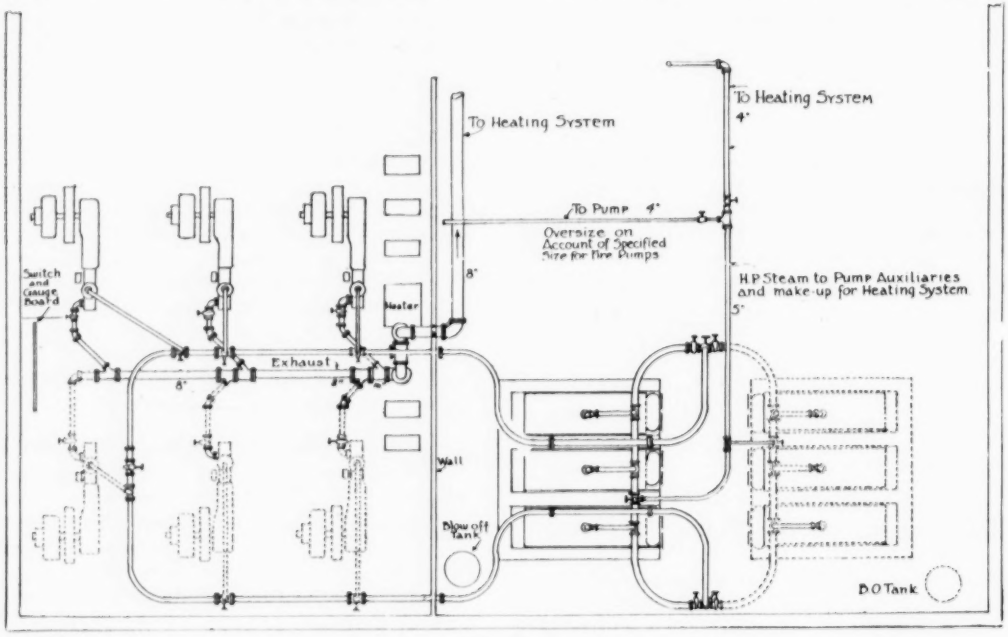


Fig. 2.

valve engines, but as the winter heating demand is greatly in excess of the exhaust steam supply of the present plant, two of the engines were changed to single-valve type, inasmuch as there is no need then for economy in the use of steam, since all, and more, than the engines can deliver, will be used in the heating. The engines therefore are in effect, merely reducing valves. One four-valved engine is retained for summer use, and as about three-fourths of the total exhaust is sent to the atmosphere, the possible economy in steam per horsepower developed is sufficient to warrant the more expensive four-valve engine. Two engines and two boilers will carry the present peak load. One is a reserve.

The installation will, later on, be doubled. Dotted lines indicate the future units. Provision is made for extending future pipe work as shown; it will be seen that the boiler header, when complete, will be a circuit header, being valved so that either or both sides may be used independently. The extension of the engine header into the engine room is made up complete with blank-flanged tees left for future engine connections; this main is valved at both ends and in

the center, so that either side, or both sides, may be used independently.

The system provides a maximum of service under all usual conditions of normal and emergency operation. Both the boiler header and the steam main are of area sufficient to carry only one-half of the total load, when the plant is complete. Normally that is all that will be on each side; should it be necessary at any time to carry the whole load through one side, that may be done with no more serious result than a much greater drop in pressure due to the doubling of the velocity.

A single exhaust main was run to serve the completed plant, flanged openings being left in the fittings, and the heater, pumps and auxiliary piping all installed for future capacity operation.

The Load.

The normal peak demand in summer will be 90 per cent of the 250 k. w. electrical load. The engines are 200 horsepower each developing a horsepower on twenty-three lb. of water. The summer load therefore will be 90 per cent of so. They are equipped with smokeless furnaces, and the entire arrangement so designed as to permit using very low-grade coal, should it be necessary to.

The fuel consumption for two boilers evaporating 7 lb. of water per pound of coal is 1,343 lb. of coal. The grate dimensions are 72×60 inches=60 sq. ft. for two boilers. Coal is burned at a rate of 22 lb. per sq. ft. per hour at normal summer peak load and 33 lb. at winter peak load. The boilers will operate at 135 lb. gauge pressure; 149.7 absolute.

Equipment.

The boilers are set in a battery of three. They are enclosed in a 24-inch air space brick wall fully lined inside with fire brick and the entire setting encased in an air-tight steel jacket. The boilers are in a "suspended" setting, being supported entirely independent of the brick work, by means of heavy cast iron columns in the brick walls, having cross pieces of channel iron set back to back and wrought iron support extending down to the sides of each boiler, at four points.

Each boiler is equipped with a dry pipe, the purpose of

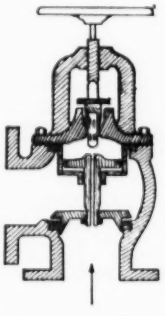


Fig. 3. Automatic Stop and Check Valve.

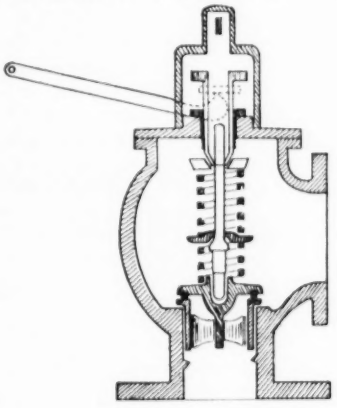


Fig. 4. Pop Safety Valve.

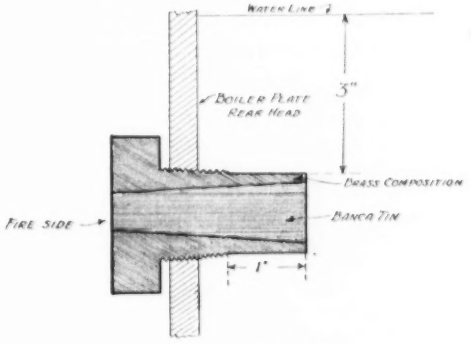


Fig. 5. Fusible Plug.

the capacity of two engines=23 lb.×200 h. p.×2 engines× 90 per cent ..... 8,300 lb.

Add to this:

Pumps, auxiliaries, horsepower for factory use.....1,100 lb.

9,400 lb.

The winter load will be:

Heating 42,800 sq. ft.=.....10,700 lb. steam
Heating boiler feed=..... 1,300 lb. steam
Pumps, auxiliaries, high pr. steam for factory, heating water for wash room..... 2,000 lb. steam

14,000 lb steam

The Boilers.

The boilers have 1,344 sq. ft. of heating surface each. Two of them, therefore, will carry the load at the usual rating of one horsepower evaporation for every ten square feet of heating surface, or 134.4×34½ lb. of steam per boiler horsepower=4,637 lb. or 9,274 lb. of steam for two. This is almost exactly the normal peak summer load. When the winter heating and electrical load is at its peak, requiring the full 14,000 lb. of steam per hour, it will be necessary to generate about 50 per cent more steam; or a boiler horsepower on 6⅔ sq, ft. of heating surface. In an emergency this can be cut even to 3⅓ sq. ft., which would mean the carrying of the full peak load of the present plant on one boiler. Draft to do this has been provided and sufficient combustion space was allowed to permit burning fuel at the necessary increased rate.

The entire boiler installation was made with the greatest care and is very substantial, the setting being especially which is to remove water that may be entrained and deliver steam to the outlet in a dry condition. At the top of the short section of pipe attached to the outlet nozzle is an automatic stop and check valve (Fig. 3). The purpose of this is to prevent the entrance of steam into the boiler in a reverse direction; therefore, should an accident occur to one boiler, it would not be possible for steam to be taken from other boilers. This type of valve can be operated in the usual manner by hand, and in addition to this there is on each branch a gate valve (globe or angle may be used). This arrangement is now compulsory in most states.

Gate valves were used throughout the installation, except for special valves such as stop and check, blow off and throttle. Gate valves permit the full area, and therefore smaller pipe sizes.

Each boiler is equipped with a 4-inch safety valve (Fig. 4), spring loaded and supplied with locking device. This is the nearest larger size to meet the requirement of one square inch of area for each three sq. ft. of grate surface.

The rules governing the size and type of safety valve are strict, and in the large cities they must be provided with means to lock and seal by the Boiler Inspection Department.

A fusible plug (Fig. 5) is placed in the rear head of each boiler, 3 inches below the water line. This plug will meet the requirements of practically all state and city laws.

(To be Continued.)

Paterson, N. J.—L. Cornette is now doing business at 447 East Twenty-third Street, having moved from 447 East Twenty-fifth Street.

PUBLIC COMFORT STATIONS *a* STATE *and* MUNICIPAL NECESSITY

In Four Parts. Part 1.

By Frank R. King

Plumbing and Domestic Sanitary Engineer, State Board of Health, Madison, Wis.

PERSONAL hygiene is one of the most important phases of public health. Adequate toilet facilities encourage attention to regular habits. One of the chief causes of ill health in middle and late life is irregular personal habits. The individual away from home is often forced to neglect these duties because proper and convenient facilities have not been supplied. It is a dangerous error to assume that the functions of elimination can be postponed.

Public comfort stations, in order to fulfill their function in community life and promote health, must be so constructed as to prevent human excretions from reaching any of the recognized channels along which disease producing bacteria travel. Bacteria which cause typhoid fever, dysentery and other intestinal diseases are frequently found in human excreta. If seepage or drainage from drains or vaults reach a public or private water supply, serious epidemics of these diseases may be produced. Further, if the contents of the vaults or basins used to collect human dejecta are not properly protected or screened, flies, vermin or small animals having access will feed upon this material, and having infected their legs with the bacteria present, act as a mechanical means of carrying the disease producing germs to human beings.

Thus the disposal of human wastes in proper manner and the maintaining of sanitary conditions becomes a duty of every municipality and citizen of the state.

As these stations are for the public's benefit, provision for their erection and maintenance should be regarded as a public function, supported by funds of the municipality. Such funds may be raised by direct taxation, by gift or devise, or by bond issue. For state-owned and maintained stations, legislative act may be required, making an appropriation for this purpose.

Figs. 1 to 9.

Wherever public comfort stations are established, they should be maintained as attractive centers for every class of patrons. Their public character should be so designated that no one will be impelled to shun them. The rest-room features, which may be made a part of such stations or be provided adjacent thereto, are a crying need in most of our cities and villages, and no class will be more appreciative of them than outsiders who visit the city for trade, business or recreation.

The maximum success of public comfort stations depends largely upon their central location, which means they should be established in the more congested portions of the community and where they are easy of access.

A very desirable plan for communities, especially the larger cities, is the erection of public comfort stations in the form of substantial, permanent and artistic structures independent of existing buildings. There are possibilities for the development of this type of station as real municipal centers for public convenience. (Figs. 10 to 16, inclusive.)

From the viewpoint of economy, ease of access and central location, existing public buildings frequently afford desirable locations for public comfort stations. Thus a municipality may utilize a courthouse, municipal building, school, fire or police station, library, bathhouse, market, band stand, bridge abutment, or other public structure. Other suitable sites are public squares, parks, playgrounds, etc. Semi-public places such as oiling stations are suitable for the purpose. Under favorable circumstances a public comfort station may be housed satisfactorily in connection with places of business, such as stores and similar mercantile centers. (See illustration to appear in Part 2.)

Obviously, public comfort stations must be cared for and supervised by regular attendants, clothed with adequate authority to enforce obedience to all rules and regulations governing use of facilities.

Stations must not only be well located but, to perform their function best, should be plainly marked. Signs should be clear and unmistakable and prominently placed. The standard public comfort station signs (Figs. 1 to 9), adopted by the American Society of Sanitary Engineering in 1912, with additional guide marks here presented, should be universally employed. These symbols will convey their meaning wherever found. Once well fixed in the public mind, they should signify service and imply comfort, safety and sanitation.

The development of the public comfort station movement undoubtedly will witness the establishment of many stations along public highways for the convenience of the traveling public. This may well involve making the highway comfort station an integral part of the public highway system and using the highway patrolman as the caretaker or supervisor of the station.

Following successful experience in large cities, public comfort stations may be made to pay, in part at least, the expense of operation through concessions, such as pay telephone booths, parcel check stands, vending and weighing machines, shoe-shining stands, newspaper and magazine

privileges, and counters for the sale of souvenirs, postcards, toilet articles, towels, soap, and auto conveniences. Primarily, however, the public comfort station should be regarded as a free, public institution, with toilet and washing facilities available for everybody, and the auxiliary features mentioned should in no way be allowed to supplant this

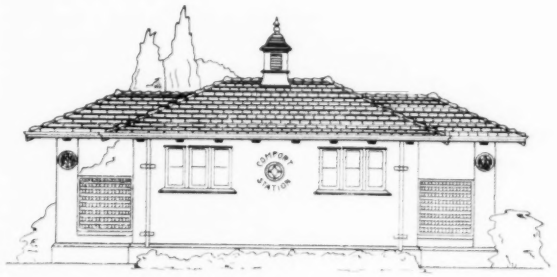


Fig. 10.

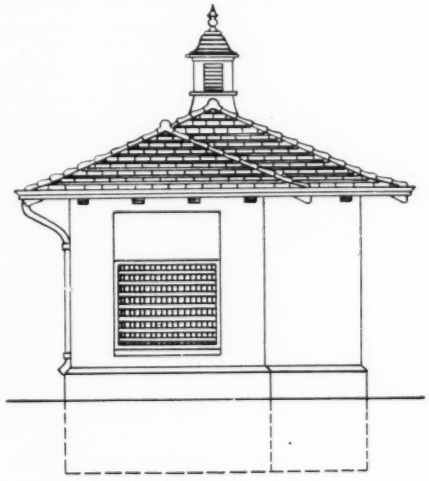


Fig. 11.

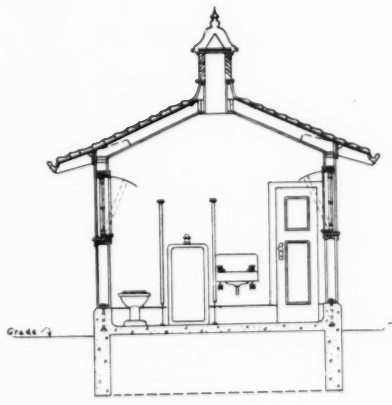


Fig. 13.

Rest Room and Public Comfort Station Laws.

In Wisconsin there are in force two statutes relating to public comfort stations. Chapter 103, Laws of 1917, is an enabling act and reads:

Rest Rooms.

"Section 937e.—1.—Any city, whether organized under

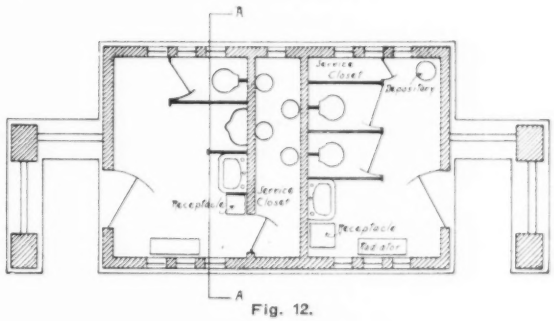


Fig. 12.

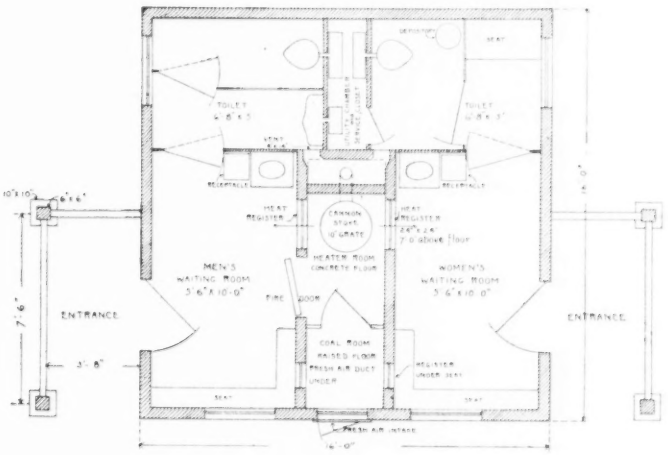


Fig. 15.

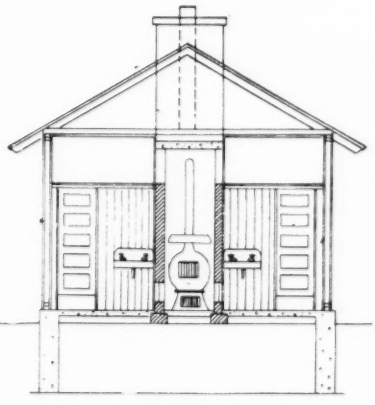


Fig. 14B.

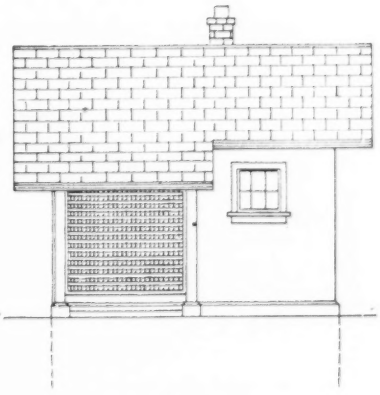


Fig. 14C.

free, public use nor to change in the slightest degree the public character of the stations.

Before proceeding with the erection of new comfort stations or rest rooms, every municipality should make a careful survey of accommodations existing in its public buildings, with a view to utilizing the toilet facilities, remodeling or enlarging them, so as to make them serviceable, thus obviating, in many cases, the necessity for new structures.

general or special charter, is hereby authorized and empowered to lease or purchase, or acquire by gift or devise, land and buildings to be used for rest room purposes for the benefit of the general public and to maintain and equip the same with the necessary furniture, toilets, heat and light and hire janitor to take care thereof, and erect, when deemed necessary, suitable buildings for that purpose upon any land acquired therefor.

"2.—The maintenance of such rest room is hereby declared to be a public purpose and a municipal function."

Comfort Stations.

Chapter 187, Laws of 1919, reads:

"Section 937f.—1.—Every city and incorporated village shall provide and maintain a sufficient number of suitable and adequate public comfort stations for both sexes.

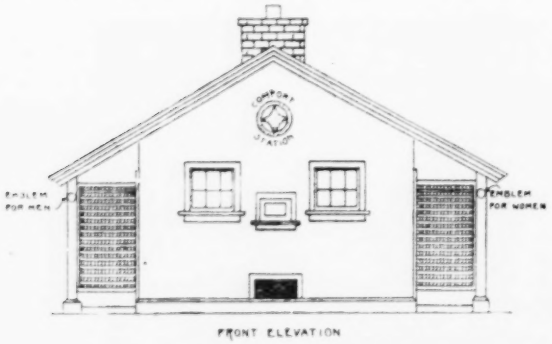


Fig. 14A.

"2.—The state board of health shall establish rules and regulations governing the location, construction, equipment and maintenance of public comfort stations, and may prescribe minimum standards that shall be uniform throughout the state.

The people of the State of ————, represented in ————, do enact as follows:

Section 1.—The state, every county, township, city, incorporated village or other municipality however organized, are hereby authorized and empowered to raise moneys for, purchase, or acquire by gift, land and buildings to be used for rest room or comfort station purposes for the benefit of the general public, and may maintain and equip the same with the necessary furniture, heat, light, sanitary conveniences, and appurtenances as may be deemed necessary, and provide for the care thereof, and may erect suitable buildings for the purpose upon any land acquired therefor.

Section 2.—The maintenance of such comfort station, rest room, or both, is hereby declared to be a public purpose and a state or local function.

Section 3.—The state, every county, township, city, incorporated village or other municipality shall provide and maintain a sufficient number of suitable and adequate public comfort stations, and may establish rest rooms, separate or in connection therewith, for both sexes, and shall provide by a general tax levy the necessary moneys to carry into effect the requirements of this act.

Section 4.—The state board of health (or ————) shall establish rules and regulations governing the number, location, construction, equipment and maintenance of public comfort stations, and may prescribe minimum standards that shall be uniform throughout the state.

Section 5.—The governing body of any county, township, city, incorporated village or other municipality may adopt and enforce additional regulations deemed essential for the proper construction and maintenance of such public comfort stations or rest rooms.

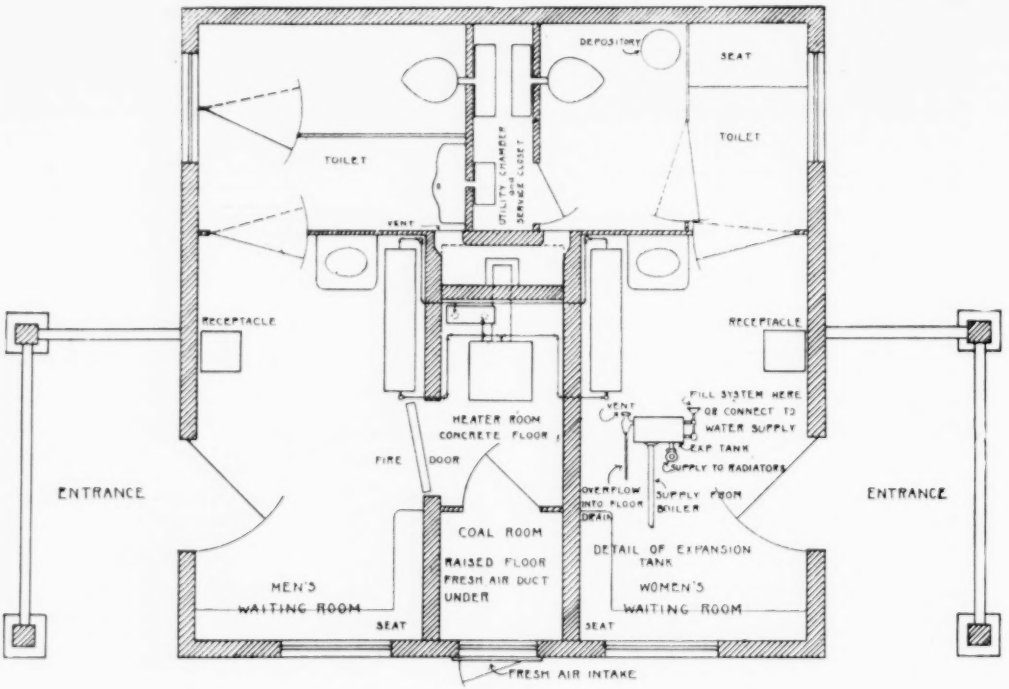


Fig. 16.

"3.—The governing body of any city or incorporated village may adopt and enforce additional regulations deemed essential for the proper construction and maintenance of such public comfort stations."

The provisions of this law are therefore mandatory for all cities and incorporated villages in Wisconsin.

Municipalities having in mind the adoption of similar laws may well combine in one act the features found in both of the foregoing Wisconsin Statutes. A suggested outline of such an act follows:

Section 6.—For the purpose of carrying into effect Section 4 of this act, the state board of health (or ————) is empowered to employ, promote and remove for cause such employes as are needed, and to fix their compensation and assign their duties, and there is annually appropriated

(Continued on Page 190.)

THE FARM WOMAN TELLS HER OWN STORY

Survey of 10,000 Homes by U. S. Department of Agriculture Covering Running Water, Sanitation, Etc., Shows Serious Wastage of Woman Power in Rural America.

By Florence E. Ward,
In Charge, Extension Work with Women, Office of Extension Work, North and West.

BY a singular anomaly the census places farm women with other home makers in a class of those having "no occupation." The testimony of the 10,000 farm women who participated in a recently completed farm-home survey would indicate that the farm woman might be better described as one having ceaseless occupation, so varied and insistent are the demands made upon her.

The Department of Agriculture, in its desire to extend to farm women the most practical and acceptable assistance possible, undertook, in co-operation with the state agricultural colleges and farm bureaus, through the survey to learn from farm women themselves what their real problems were, so that the co-operative extension service of the Department of Agriculture and state colleges of agriculture might be guided in doing their part toward the solving of those problems.

What the Survey Showed Regarding Sanitary Conveniences for 10,000 Rural Homes.

	Water to Carry, Percentage.	Distance, Feet.	Running Water, Per Cent.	Power Machinery, Per Cent.	Water in Kitchen, Per Cent.	Sink and Drain, Per Cent.	Outdoor Toilet, Per Cent.	Bathtub, Per Cent.
Eastern	54	23	39	12	67	80	87	21
Central	68	41	24	29	47	52	93	18
Western	57	65	36	22	18	44	86	23
Average	61	39	32	22	48	60	90	20
Number of Records	6511	6708	9320	9080	6949	9334	9580	6784

How the Study Was Made.

It may be asked to what extent the homes surveyed are typical of farming conditions over the 33 northern and western states. It was requested that state colleges in selecting the counties to be surveyed carry out the following plan: (1) Choose the most typical farming counties of each state; (2) take one or more of the most typical farming communities in each county; (3) secure a record from every farm home in the locality selected, irrespective of size, farm tenure, prosperity of farm family or other conditions; (4) select, if possible, a locality containing from 35 to 50 homes; and (5) include in the survey none but bona fide farm homes. A study of the returns shows that these requests were fairly well complied with.

If we follow the average woman of the survey through one day's routine, some conception will be gained of the vitality and skill called into play by her duties as cook, seamstress, laundress, nurse and factor in community life, as well as producer of dairy, garden, and poultry products.

Compared with even 10 years ago the returns of the survey show a big change for the better in the conditions existing in the farm homes of this country; 32 per cent now have running water in house, 22 per cent have power to use in lightening their household tasks, 95 per cent have screened windows and doors, 95 per cent have sewing machines, 72 per cent have telephones, 62 per cent have automobiles, 24 per cent have vacuum cleaners, 47 per cent have carpet sweepers, 21 per cent have some kind of a lighting system, and 26 per cent have gas or electric irons. Many women are still without any or all of these conveniences and when their duties as producers of garden, dairy, and poultry

(Continued on Page 191.)

QUESTIONS & ANSWERS

This department is a clearing house for ideas and is open to every reader of "Domestic Engineering." Problems sent in are replied to at the earliest possible moment by "Domestic Engineering," and this department can be made more valuable if readers themselves will help the man who needs assistance. Read the questions and answers. If you have had similar problems, or know from experience how the faults can be remedied, do not hesitate to send in your comment or criticism. It will be some satisfaction to you to know that you have helped a fellow craftsman and a pleasure for us to pass on the data. "Every man owes some of his time to the upbuilding of the profession to which he belongs."

CORRECT SIZE OF BOILER AND HEATER TO FURNISH HOT WATER TO SIX SHOWERS.

Editor, "Domestic Engineering":—A miniature drawing of a job which is giving trouble is shown in Fig. 1. The real trouble seems to be that the 120-gallon basement boiler does not get hot from top to bottom until after about two and one-half hours of vigorous firing. The heater is only a small one, having a capacity of 30 degrees per hour, when connected

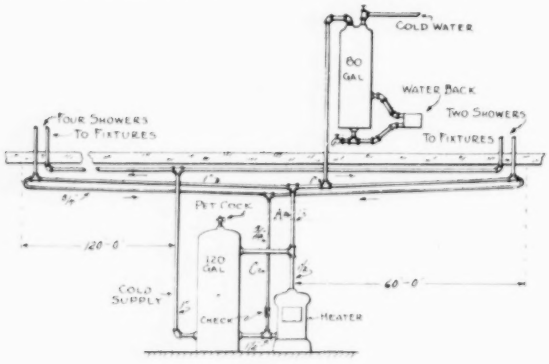


Fig. 1.

to a 120-gallon boiler, which I think is too small. The circulating line, which is ¾ inch, has never worked. "A" claims the circulating line should work when the boiler is only partly hot, while "B" contends that boiler has to become thoroughly warm before the line can circulate.

It will be noted that the boiler is not the regular tapped boiler, and we have a ½-inch pet cock on top to vent it. Can you give me any information on this? Also state the size of the boiler and heater that should be installed to take care of six shower baths with an average of twelve baths taken in two hours.

Iowa. C. W. F.

It does not matter whether the 120-gallon boiler is hot or cold, the hot water should circulate through the two circuits so long as the heater is heating the water, and providing the flow mains and circulation lines are not air-bound, or the check valve is not closed tight.

We advise, however, increasing the circulation drop pipe C at heater to 1 inch, as it has to take two ¾-inch circulating mains. The check valve also should be 1 inch, and its flapper should hang open normally, in such a way that it will close automatically by the attempted back flow of water in the circulation lines when a hot faucet is opened.

Regarding the controversy between A and B, we have to decide that A is right and B is wrong.

It is true that the boiler will become warm, then hot, while the circulation to the showers is going on, but according to the way the job is piped the hot water can circulate to the showers from heater direct, whether the boiler is hot or cold, because hot supply to showers is taken off top of hot flow pipe from heater. The circulation to showers is thus favored. The showers, however, do not take all the circulation, as the 1½-inch pipe is large enough to furnish a surplus which goes into the boiler. Thus the heater will circulate water to both the boiler and the showers, and the shower circulation is independent of the temperature of the boiler.

We hope this is clear. Regarding size of boiler and heater necessary for six showers with an average of twelve baths per hour we would compute as follows:

Estimating three gallons of water per minute per shower, steady running, the total quantity of water from six showers would be practically 1,000 gallons in one hour. That we estimate as a maximum.

If the water is heated to 150 degrees average temperature, and the incoming cold water is 50 degrees, and the average temperature of showers is 100 degrees, then exactly half of

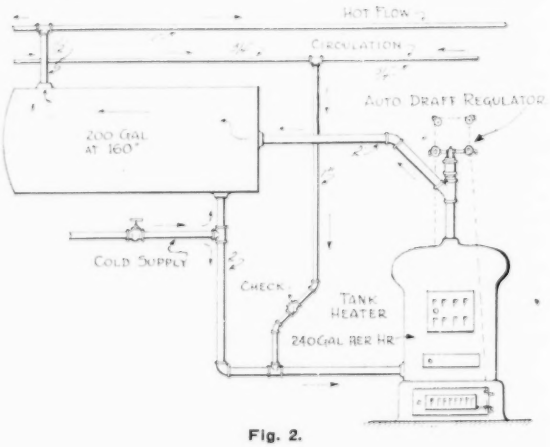


Fig. 2.

the water used would be hot and the other half would be cold.

That means 500 gallons of hot water per hour, steady running for all showers.

At the rate of twelve baths each shower per hour, the showers will be running almost steady, for each bath only takes five minutes on an average.

No doubt there will be a little time in that hour when each shower will be shut down between baths. If we call that time 20 per cent, which seems reasonable, then 400 gallons of hot water is all that will be required per hour, but that hot water must have a temperature not less than 150 degrees.

If this maximum rate of bathing is maintained a whole hour, it would appear impossible for your present arrangement to furnish enough hot water. Your heater is too small. The tank also is too small.

An arrangement similar to Fig. 2 might be used to better advantage in this case.

The tank is 200 gallons capacity. The heater is 240 gallons capacity on a five-hour run, or 200 gallons capacity on a six-hour run. This requires a grate area of nearly 2 sq. ft., and a 7-inch smoke pipe. Then when 400 gallons of hot water are required in one hour, the tank can give 200, while the heater makes up the other 200.

The automatic damper regulator will open up the dampers at such a time and hasten combustion of the fuel so that in the event of a long steady drain at the showers the heater will quickly get in active action and supply any shortage of the boiler.

SETTLING A DISPUTE ABOUT CIRCULATION TO UPPER RANGE BOILER.

Editor, "Domestic Engineering":—Fig. 1 is a rough sketch of connections to two range boilers. The lower is a 62-gallon boiler located in the basement, while the upper is a 30-gallon boiler placed on the first floor. The distance for the single pipe line is about 20 ft.

One party to this controversy contends that the water will circulate from the lower boiler to the upper one through the single pipe line. His contention is that hot water, being much lighter, will rise to the upper boiler through this line. I told him it would be necessary to run a flow and return, as shown by dotted lines, and at X disconnect the single line from the

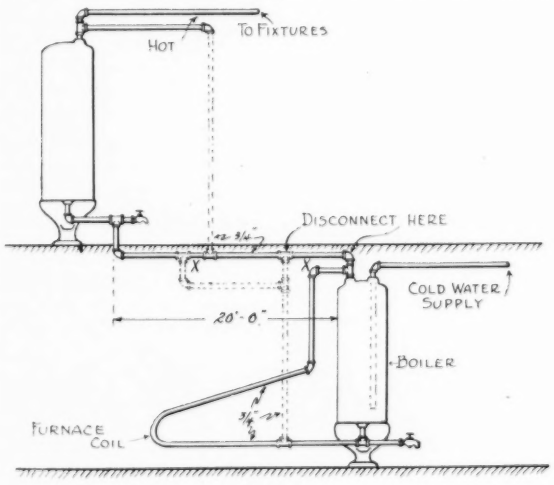


Fig. 1.

top of the boiler, and carry it to the bottom return. This will give the circulation to the upper boiler.

Kindly let us know who is right.

Colorado. W. G. T.

You are both wrong. The other party is wrong because hot water in lower boiler cannot work its way up the single pipe line to upper boiler by circulation. It can only get into upper boiler when a hot water faucet is opened. Then the cold supply coming into lower boiler will force the hot water through the 20 ft. of single pipe and up into the upper boiler.

You are wrong, because you connect the top of upper boiler to bottom of lower boiler. That would not give proper circulation.

Fig. 2 shows a simple way to do it so as to have positive circulation. The furnace coil delivers directly into top of upper boiler. The cold water at bottom of upper boiler falls

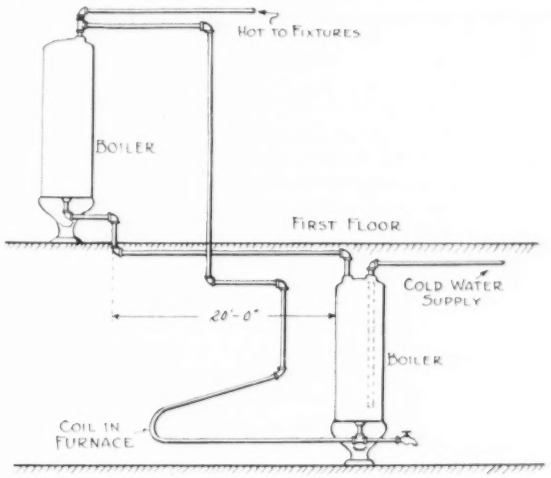


Fig. 2.

into top of lower boiler. The coldest water at bottom of lower boiler feeds the furnace coil.

When hot faucets are opened, hot water is drawn from top of upper boiler, but the hot water in lower boiler is forced up to upper boiler by the cold supply to lower boiler. And when no hot water is being drawn, the upper boiler heats first, then the lower boiler. That appears to be the right way. The point where the hot water is drawn off at top of upper boiler is the first to heat and the last to become cold, which is good practice in domestic hot water supply installations.

Twenty Years Ago in "Domestic Engineering"

Saturday, October 20, 1900.

The officials of the Master Plumbers' Association of Pittsburgh have established headquarters in the Builders' Exchange on Market Street, where all strike business is being conducted. The master plumbers laugh at the demand of the men that they be paid $3.50 a day, no matter if they are worth it or not.

In the death of John Simmons, president of the John Simmons Co., 106-110 Centre Street, New York City, the trade has suffered an inestimable loss. His early business career was with Hunter, Keller & Co., and in 1880 he withdrew to form his own company, which was incorporated in 1891, with his two sons as partners. His funeral was attended by an unusually large concourse of sympathetic friends.

The following prices were quoted in the metal market October 17th, for carload lots, New York: Lake copper, 16.87½ cents cash; pig lead, domestic, 4.37½ cents cash; No. 1 Foundry, Pittsburgh, $14.25; Bessemer pig, Pittsburgh, $13; tin plates, coke, 100 lb., $4.00.

The Salesman's Corner

THE FEAR OF DEFEAT.

By The National Trade Extension Bureau.

THE pens of expert directors of salesmen are producing much these days about how to bring out the very best in a salesman. There is much logic in all of the arguments advanced. Personal letters with peppery paragraphs, ginger talks, corporation pride and slogans all have their places. But after all, real ginger, the real pep and go, the strong push has its start within the man himself.

All the ginger letters in the world would not arouse a man's fighting blood as a salesman if it wasn't characteristic of the human race to possess that real "dead-in-earnest" desire to beat the other fellow to it.

It would seem that the "Fear of Defeat" (not the thought of defeat) is the greatest spur that pushes a man forward.

When we say "fear" we do not mean the humiliation of defeat in the eyes of one's friends, but we do mean the fear one has "If I don't make good, if I do not win, I may find myself out in the street, hungry and cold."

The fellow who does not possess such fear is to be pitied. Thousands like him now hold down benches in the parks of our great cities and provide material for charity worker's attentions.

These are dangerous days for the best of salesmen. Orders are more plentiful than the "House" can take care of. Just now his main function and duty is to keep the customer satisfied. After that, time hangs heavy on his hands.

It is therefore easy to get into a rut that will be difficult to get out of when conditions change. The clever salesman will not allow himself to waste time thus or to get into such a rut.

He will take advantage of any spare time that he now has, by making a study of business in general. He will make a study of his trade conditions, as they now exist, and work out plans that will improve these conditions and provide for future business.

He will make a study of the question of advertising and selling, as it affects his custom, so that he can more fully advise his trade along these lines. He will learn more about accounting, credits and collections. He cannot know too much about these questions for he must be able to judge and advise for both his house and his customer.

He will make a study as to the right way to approach a delinquent customer. He will learn how to get the money from slow accounts and how to speed up the collections from such customers.

A real salesman is he who can sell to, *and collect from,* the fellow whom others pass up as no good. The poor salesman is he who sells the no good account and passes the buck to the credit man.

Many poor customers might be converted into good customers and good credit risks, if the salesman making the territory *knew how to teach* the customer better business methods.

Besides these, it is highly essential that you draft a personal platform upon which to operate. You cannot select a better one than the eight following principles as set out by the "Finder's Salesman" magazine.

1. First of all—honesty. Because this trait enters into every fundamental that makes a good salesman. The *man* must represent himself honestly—then his house or product or whatever is to be sold must be presented as it is.

2. Enthusiasm for the thing sold, coupled with second-nature knowledge of the thing offered, comes next. If you do not believe in the thing you represent, no one else will. And unless you are able to present your points about it concisely, accurately and without hesitation, you are going to lose when you should have won.

3.—Know the needs of your customer. Know how to teach him to sell more goods. Know how to advise him on business problems.

4.—Watch for every opening whereby you may let your man sell himself—then he will have a greater respect for his own judgment in buying. This is important.

5.—Get the essential facts home. Choose your words and get them to their mark with precision. Never oversell—it's like wasting men after a battle has been really won.

6.—Never "knock" a competitor. Remember that you are selling your own proposition, and if it cannot stand on its own legs, it doesn't deserve them. But it is well to know the weak points back of your competitor's things—that you may emphasize the strong points about your own.

7.—Neatness of dress and cleanliness of appearance are very important.

8.—Never lose your temper, no matter what the provocation.

If you are not on this kind of a platform get there at once.

AFTER YOU HAVE ATTENDED A SALES CONVENTION AND TOLD YOUR SALES MGR. IT WAS THE BEST EVER-
-AND YOU GO HOME FULL OF NEW SELLING IDEAS - NEW PEP — AND NEW AMBITION, —
PEP
AND YOU FOLLOW UP THE NEW CONVENTION IDEAS WITH REAL STUDY AND REAL ACTION
-AND ALL YOUR FAMOUS LITTLE RUT DIGGERS GET THE BACK DOOR SIGNAL —
-AND YOU FIND THAT YOU CAN CASH ON THOSE SALES CONVENTION IDEAS AND -
AND 100% USE OF SALES CONVENTION TIPS MAKES YOU 100% USEFUL TO YOUR COMPANY
GOSH AINT IT EN-COUR-AGIN !
ORDER

Association.

A
Sure
Solution
Of
Cobwebbed
Individualism
And
The
Inefficiency
Of
Narrowmindedness.

PRELIMINARY REPORT *on the* PROPOSED UNIFORM PLUMBING CODE *for* MASSACHUSETTS

By Special Commission, Appointed at the Suggestion of the Massachusetts State Association of Master Plumbers

(Continued from Page 40 in the October 2nd Issue.)

"Heating Water for Domestic Purposes.

"Water for domestic purposes is heated in various ways; by cast iron receptacles known as water backs, or water fronts, in kitchen stoves; by specially designed coal stove heaters placed in the basements of houses; by gas heaters with automatic control; by gas heaters without automatic control; by coils of pipe located in furnaces; by steam coils, etc. A storage tank, usually known as the 'boiler,' is provided in most of these systems, but it is not necessary when certain types of gas heaters are used. For the most part these heating devices are satisfactory and seldom cause trouble except when there is corrosion of the heaters, pipes, and tanks as already mentioned. During the last few years, many accidents have resulted from the explosion of copper boilers used in connection with gas heaters without adequate automatic control. Apparently the trouble has come from allowing the gas heaters to burn until the tank becomes overheated. This results not only in increased pressure, but in materially weakening the strength of the metal. It is said that the tensile strength of copper at the boiling point of water is 5 per cent less than at the freezing point and that at 300 degrees Fahrenheit it is 20 per cent less. Up to the present time no lives have been lost through these explosions, but so many have occurred and the damage to property has been so great that unless measures are taken to automatically control the heating of water, there is danger not only to property, but to human life. Steel boilers are stronger than copper boilers, but they are more likely to rust and make the hot water dirty. This is a subject which needs to be considered in any plumbing code.

"There are two systems of supplying hot water in separate dwellings, known as the tank system and the pressure system. With the tank system the water from the street mains is delivered into an attic tank above all fixtures. The tank is open to the air and is provided with a ball cock, inlet and an overflow.

"From the tank a pipe leads to the lower part of the boiler and the water passes from the boiler to the water back. This system maintains a uniform pressure, which is less than that of the street mains. An important feature of this system is the expansion pipe for the boiler, which commonly extends upward and is turned over into the attic tank. This serves two purposes—that of taking care of the expansion of the water during heating, and that of providing a means for a partial discharge of any air which may be liberated from the hot water system. This method was formerly universal, but in recent years has been less used.

"With the pressure system there is no attic tank and the entire hot water system is under the pressure of the city mains. The supply is taken directly from the house supply to the lower part of the boiler. There is no expansion pipe and there is thus no opportunity for the removal of air except through the faucets. It is the use of this pressure system combined with the unregulated gas heaters which has caused recent boiler explosions.

"There are likewise two methods of distributing the hot water—the direct and the circulating method. With the former, the service pipes extend from the top of the boiler to the various fixtures. If not drawn upon continually, the water in these pipes becomes chilled and hot water cannot be obtained until the cold water has first been drawn off—that is, the water has to be allowed to run for a while before hot water is delivered from the faucet. With the circulating system, there is a return pipe from some point near each fixture to the boiler so that hot water is continually circulating through the system. By this method hot water can be obtained more quickly from the faucet and the waste of water is lessened, but on the other hand, the expense of installation is increased.

"Attention has already been called to the matter of corrosion, but it may here be repeated that hot water is more corrosive than cold water and that the pressure system which does not permit the escape of dissolved air tends to make the corrosion greater than with the tank system, which gives opportunity for the partial escape of dissolved air.

"It is a matter of common observation that oftentimes rusty water may be obtained from the hot water faucets in houses where the cold water is uniformly clear. This is because of the greater corrosion which occurs in the hot water system. The present tendency to use clearer waters obtained from wells or from filters and the use of the pressure system in place of the tank system and the delivery of water at a higher temperature than formerly, together with the galvanized iron and steel pipes in place of lead pipes, has made the problem of rusty water more conspicuous than it was a generation ago.

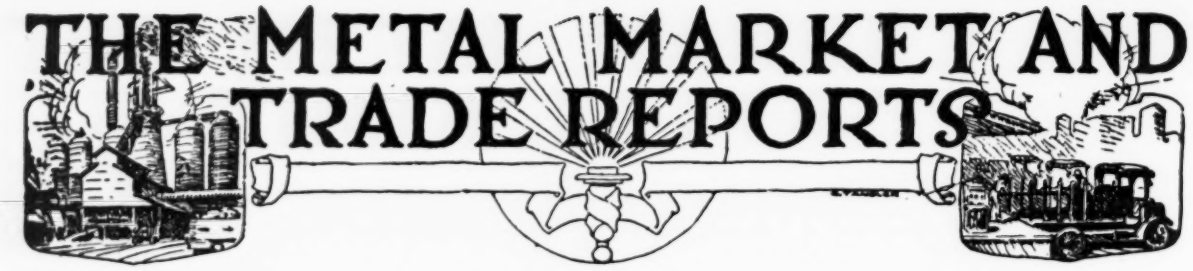
"The problem of rusty water must be solved along two lines: First, by the choice of materials for the heaters and hot water pipes which are properly adapted to the character of water supplied; and, second, by the selection of treatment of the public water supply so as to reduce its corrosive properties to the lowest practicable amount. It is obvious, therefore, that there should be greater co-operation between the water works officials and the plumbers. The householder is also an interested party because he very properly desires to keep down the expense of his plumbing installation and repairs and at the same time secure water which is clear and attractive in appearance.

Pipes for Distributing Hot Water.

"In the early days of water supplies lead pipe was almost exclusively used for distributing both cold and hot water. At the present time galvanized iron or steel pipe is commonly used in Massachusetts for distributing cold water to

(Continued on Page 188.)

THE METAL MARKET AND TRADE REPORTS



Steel and Iron.

More than usual interest is being shown in the wire and nail market, and buying has been falling off sufficiently to thoroughly test prices. With the United States Steel Corporation base of $3.25 per keg for nails, pulling hard on the higher averages of independent mills, and the latter varying all the way from $4.25 to $4.75 base, any quieting down of the demand would naturally make for a closer relationship between the two interests in general. This is what is apparently taking place, with the result that some of the smaller wire and nail producers are offering concessions from their former base, sufficient to break through the stronger price lists of large independent interests. In other words, plain wire at $4 base in Pittsburgh is now being offered by interests out of the district at $3.75 base. The quotations during the past week caused some surprise and speculation as to the ultimate effect. It is believed in the consumers' circles that the softening of the high price base of the smaller producers is due to the normal quieting down in new demand for wire products at this season, and the position of the buyer is much improved thereby. In the next few months, or to the end of the year, new trade will be much lower than for some time. The only support of any importance will be the export demand, which is now being cared for much better than for months.

There appears to be considerable strength to the $4.50 base on nails and the belief is quite strong that this is where the adjustment will ultimately land the market. In the meantime, due to the changes that have taken place, the naturally quiet attitude of the market is even more quiet and the wire trade, for months one of the most active and strained of all finished lines, is now found in the procession of the declining price products. The basis of some of these wire changes is unquestionably found in the softening tendency of the semi-finished steel market. For a long time independent wire and nail makers, dependent upon the outside sources of supply of raw material, have been forced to pay all the way from $75 to $85 a ton for rods. Today the maximum quotation on rods is $75 and considerable offerings at $70 have failed to bring buyers out. The steel corporation base on rods is $57 and buyers have their eye on that minimum standard of buying and will likely wait to see how close independents will come to it before placing new tonnage.

The question is being keenly argued in steel circles whether the home trade need have any fear from Belgium competition in our own markets to the extent that it has in other markets of the world. Observers are more inclined to discount the former, but generally agree that Belgium competition has hit American steel products severely in foreign trade, particularly at a time when exchange reacts adversely against American exports.

No section of British industry views a coal strike with greater apprehension than iron and steel, and evidences are reported already at hand of the serious setback a strike would bring upon the industry. Market movements are virtually suspended inasmuch as works are not in position to commit themselves to new business until the air is cleared. However, all efforts were bent in the past two or three weeks toward reaching a maximum output before the strike broke and to fulfill old contracts. These facts have been absorbed with much concern in this country and large interests are considering possible developments that may result from the crippling of British works. British pig iron has remained very firm and scarce, while steel lines receded, and an extreme scarcity of iron in England suggests the possibility of resumed buying in the American markets. At the same time, of course, British works would need large stocks of coal and indications are clear that efforts are being made to get a substantial supply from this country. This is a factor that is giving iron and steel makers the greatest concern. The question arises if domestic works will be handicapped by the expected heavy exports of fuel. Furnace and mill deliveries of coal and coke are irregular at best, owing to transportation uncertainties and car shortage, and though the users readily foresee a rising fuel market, they feel confident that ample provision will be made for domestic deliveries before permits will be granted for export. Prices for pig iron are quoted as follows:

No. 2X, Philadelphia	$50.25@53.75
No. 2 Southern, Birmingham	42.00
No. 2 Buffalo	49.00@50.00
No. 2 Chicago	45.00@46.50
Basic Valley, furnace	46.00
Bessemer, Pittsburgh	50.46

Copper.

The domestic copper market is very irregular and opinions differ as to the actual prices. They change so rapidly that smaller sellers are dazed by daily developments in an endeavor to keep up with the swaying quotations. Producers remain a step behind, and as quickly as they offer concessions for substantial business the open trade goes one better and shades to lower levels. As a result open trade interests reduced prices to near 16 cents a pound level, and could get few takers even at that low level. Reports are current that the large agencies would be satisfied to do business at 16½ cents, and it is felt that further concessions will come as smaller sellers try to dispose of weak stocks. The downward movement of the market tends to keep consumers out rather than otherwise. Users hesitate to place orders, expecting that they could get better offerings as prices are cut from day to day. They are all looking for low peak, and no one can foresee just when that will come. Feeling is growing among the large buyers that the operators will sooner or later make serious efforts to dispose of their large stocks, and the former mean to take advantage of that opportunity. The fact that leading producers have been forced to get loans to carry surplus metal and continue operations is taken as an indication that most makers will find a time when the limit of their endurance has been reached and they will seek relief by unloading their piled metal.

Tin.

Bears staged one of the most effective raids on the British tin market during last week and at the close of trading on the London Exchange were satisfied to find a decline of over 21 pounds a ton on standard spot. The consumers in the domestic trade are more actively attracted by the low tin prices, and no surprise would be caused by a buying movement on their part. Their needs are not large, but it is believed that no objection could be had to contracting ahead at low levels. The

nearby market is easy because little interest is shown in prompt deliveries, prices remaining at low peak of 38c a pound.

Lead and Zinc.

The position of these two metals is much better than copper or tin, as the London markets hardly showed the adverse influences of the coal miners' strike. British prices were held up by short stocks and active buyers, with American interests predominating. More confidence was also felt here because the continuance of heavy importations was not thought likely for a while in view of coal shortage and, therefore, transport troubles in England. Firm lead prices in London steadied quotations in New York, though the undertone is still weak because buying is at a low ebb. Zinc was also dull but feeling was more cheerful. Lead prices in the open market remained around 7½ cents, New York, and 7¼ cents, East St. Louis. Spelter was quoted at 7.35 cents nominally, New York, and 7.20 cents, East St. Louis.

Other Metals.

Quotations on other metals in New York are as follows:

Aluminum (in 50-ton lots).....33 cents per lb.
Antimony (Chinese and Japanese)..... 7½ cents per lb.
Solder, No. 1.....34½ cents per lb.

New York Old Metal Market.

The following prices are current for old metals:

	Buying	Selling
Copper, heavy	12½ to 12¾ cents	13¾ cents
Copper, light	11 to 11½ cents	12½ cents
Brass, heavy	7½ to 8 cents	9 cents
Brass, light	5¾ to 6¼ cents	7¼ cents
Brass turnings	6 to 6½ cents	7½ cents
Lead, heavy	5¼ to 5¾ cents	6¾ cents
Tea lead	3¾ to 4¼ cents	5¼ cents
Scrap zinc	4 to 4¼ cents	5½ cents
Solder joints	8 to 10 cents	11 cents
Mixed babbitt	5 to 8 cents	9 cents
Cocks and faucets	10¼ to 10¾ cents	11¾ cents
New zinc clippings	5 to 5½ cents	6½ cents
Block tin pipe	30 to 32 cents	34 cents
Cast aluminum	18 to 20 cents	21 cents

Chicago Old Metal Market.

Chicago wholesale dealers' prices are nominally as follows:

	Buying	Selling
Heavy yellow brass	8 to 8½ cents	9½ cents
Brass, light	7½ to 7¾ cents	8¾ cents
Brass borings	11 to 11½ cents	12½ cents
Brass turnings	7¼ to 7½ cents	8½ cents
Red brass	12 to 12½ cents	13½ cents
Copper, crucible	13 to 13¼ cents	14¼ cents
Copper, heavy	12½ to 12¾ cents	13¾ cents
Copper, light	11 to 11¼ cents	12¼ cents
Lead, heavy	6 to 6¼ cents	7¼ cents
Tea lead	4¼ to 4½ cents	5½ cents
Zinc	4 to 4¼ cents	5¼ cents
Solder joints	9 to 9¼ cents	10¼ cents
Cast aluminum	18 to 19 cents	20 cents
Block tin pipe	30 to 32 cents	33 cents

It has been announced that the railroads have filed with the Interstate Commerce Commission tariffs providing for a general increase in demurrage rates, as agreed upon with a committee representing the National Industrial Traffic League, which the commission is asked to make effective on five days' notice.

The Comptroller of Currency has issued a statement showing that the resources of all banks in the United States break all records anywhere, exceeding the combined bank assets of all other leading nations of the world. It gives $53,000,000,000 as assets in national and state banks, saving banks, trust companies and private banks.

AMERICAN SOCIETY OF SANITARY ENGINEERING SEEKS MEMBERSHIP OF 1,000 IN 1921.

This is an era of large things, of accomplishments on a scale at once so stupendous that without centralized authority and careful organization, little can be done. Everything from the small backwoods logging camp to the Standard Oil Company is organized, has its centralized authority, its intense organization and its annual meetings of its officers, directors and members, to consider matters for the common good.

If the American Society of Sanitary Engineering would accomplish its mission to the fullest extent, it would extend its influence to every corner of the earth. It must function as a single unit, and to do this, its component parts, Active, Associate, Contributing members, must become and continue to be, functioning parts of this great machine, driving as a unit towards the goal of making the world sanitary for humanity.

The American Society of Sanitary Engineering is not concerned in blowing its own horn; it does not seek self-applause; it is concerned in getting things done and never demands its measure of reward. It believes in subordinating personal praise and glory to the largeness of the work there is to do. Service, self-sacrifice and co-operation are its principles. It believes that the world and its people are less concerned in the agency of achievement than in the finished product of the effort of such agency.

Membership in the American Society of Sanitary Engineering is purely voluntary. It forms a common ground upon which all those interested in sanitary science may meet. The sanitary engineer, the plumbing inspector, the sanitary inspector, the superintendent of sewers, the master plumber, the journeyman plumber, the jobber, the manufacturer all may become either active, associate or contributing members.

The American Society of Sanitary Engineering recognizes its full duty in that tremendous undertaking in standardization of plumbing and plumbing material. Co-ordinating with the other interested organizations, we have a duty to perform and it is each individual's duty to contribute his share to this great work. Our goal for 1921 is 1,000 members and A. E. Smith, State Department of Health, Columbus, Ohio, has been appointed chairman of the Membership Drive. The Committee of Research, with J. J. Crotty, of Boston, Massachusetts, as the general chairman, is already active.

Interest in the public comfort station is being revived. Each individual who is interested in the advancement of sanitary science is welcome to membership in the American Society of Sanitary Engineering.

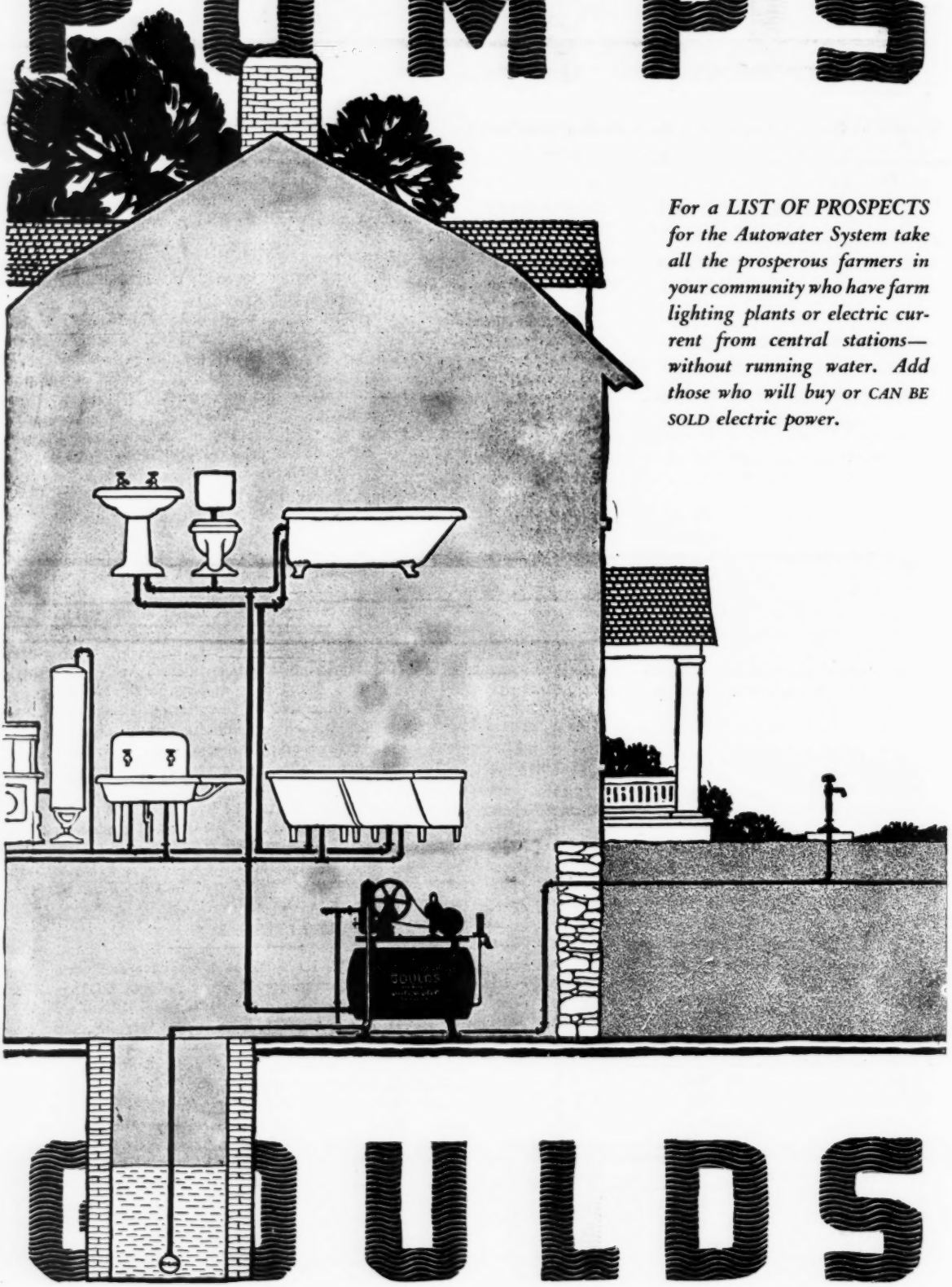
Westfield, N. J.—Harry L. Wahl, 725 North Avenue, is to install plumbing, heating and electric wiring in the $18,000 residence being erected in that city for Guy H. Noble.

New York City.—Callahan, Kingsley Co., Inc., 343 West Fifty-second Street, have the contract to install heating in the nine-story office building now under construction for the Union Indemnity Co. at Maiden Lane.

Erie, Pa.—Fred Egan and the Northwestern Heating & Contracting Co., both of this city, have secured the contracts to install plumbing and heating, respectively, on the garage building that is to be erected for Schaffner Bros. Co., at Fifteenth and Reed Street, here.

New York City.—John S. Murphy, 353 West Seventy-eighth Street, was awarded the plumbing contract on the $80,000 one-story parish house and church building that is to be erected on Ridgewood Avenue and Woodland Road, Maplewood, N. J., for the St. George Episcopal Church.

PUMPS



For a LIST OF PROSPECTS for the Autowater System take all the prosperous farmers in your community who have farm lighting plants or electric current from central stations—without running water. Add those who will buy or CAN BE SOLD electric power.

GOULDS

PUMPS

OF all the modern conveniences that can be put in a farm home, the greatest is running water. It is greater than electric light, telephone, all other labor-saving appliances. Farmers in all parts of the country, in response to investigation, have declared this to be true.

Yet thousands of farmers have electric light, telephone, etc.—and no running water. And that's why there is such a big market today for

GOULDS HI-SPEED AUTOWATER SYSTEM

—the ideal water supply system for the average farm.

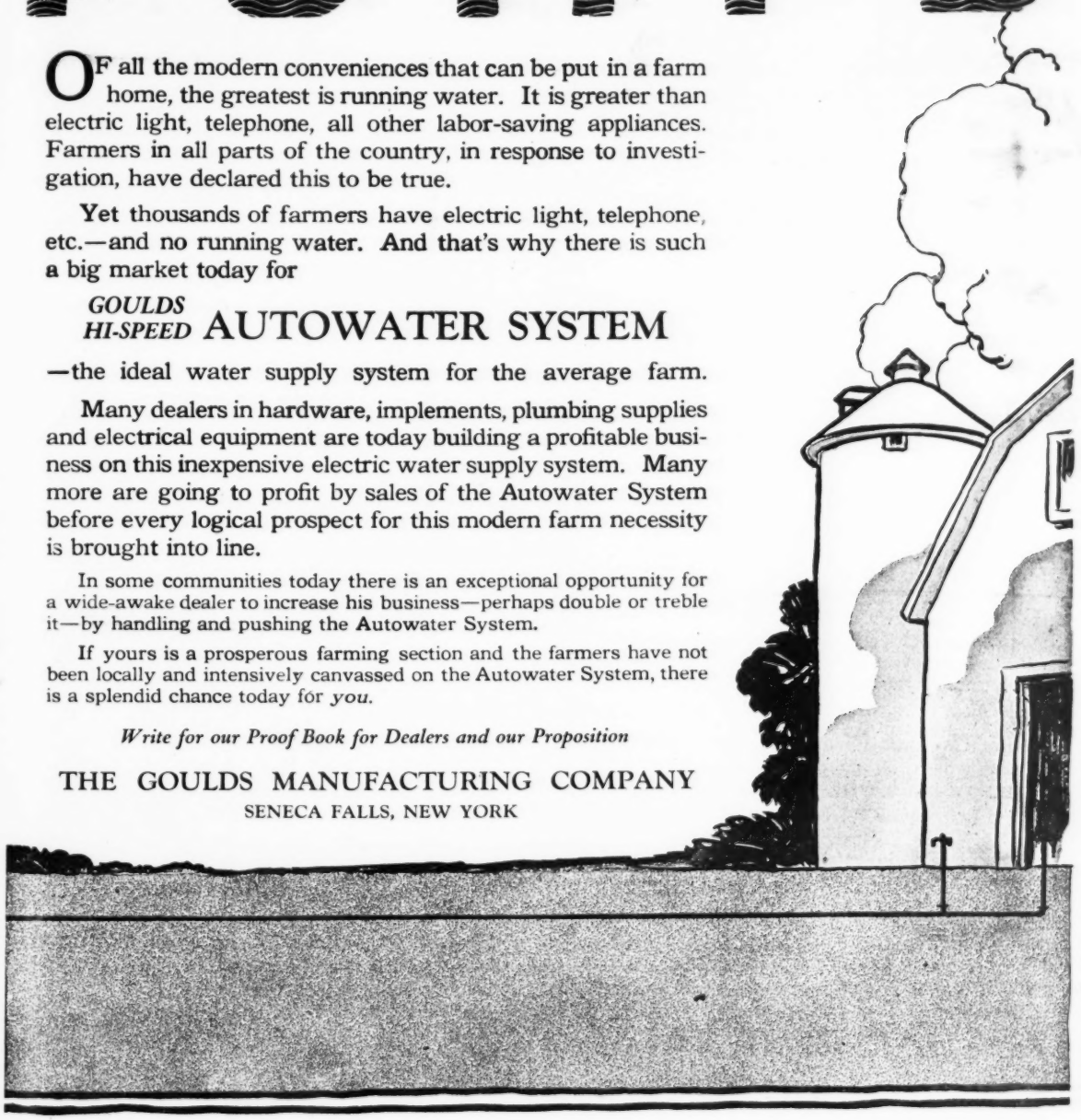
Many dealers in hardware, implements, plumbing supplies and electrical equipment are today building a profitable business on this inexpensive electric water supply system. Many more are going to profit by sales of the Autowater System before every logical prospect for this modern farm necessity is brought into line.

In some communities today there is an exceptional opportunity for a wide-awake dealer to increase his business—perhaps double or treble it—by handling and pushing the Autowater System.

If yours is a prosperous farming section and the farmers have not been locally and intensively canvassed on the Autowater System, there is a splendid chance today for *you*.

Write for our Proof Book for Dealers and our Proposition

THE GOULDS MANUFACTURING COMPANY
SENECA FALLS, NEW YORK



GOULDS

AMONG THE WHOLESALERS AND MANVFACTVRERS

ALEX B. PIERCE RE-ELECTED PRESIDENT OF CENTRAL SUPPLY ASSOCIATION.

The twenty-sixth annual meeting of the Central Supply Association took place at the Hotel Sherman, Chicago, on Wednesday, October 20th, at which time officers were elected for the ensuing year. The meeting was well attended. Officers were elected as follows:

President, Alex B. Pierce, N. O. Nelson Mfg. Co., St. Louis, Mo.; first vice-president, E. C. Garrity, National Plumbing & Heating Supply Co., Chicago; second vice-president, E. I. Leighton, Leighton Supply Co., Fort Dodge, Iowa; treasurer, Ed. F. Niedecken, Hoffmann & Billings Mfg. Co., Milwaukee, Wis.; secretary, Paul Blatchford, Chicago.

Executive committee: W. E. Clow, Jr., James B. Clow & Sons, Chicago; P. F. Kimball, Kimball-Eisenberg Co., Detroit, Mich.; J. D. Tschopik, Standard Sanitary Mfg. Co., Pittsburgh, Pa.; C. V. Kellogg, Kellogg-Mackay Co., Chicago; J. R. Steneck, Illinois Malleable Iron Co., Chicago.

National committee: John Walker, Walker Mfg. & Supply Co., Detroit; Murray W. Sales, Murray W. Sales & Co., Detroit; C. V. Kellogg, Kellogg-Mackay Co., Chicago; George H. Gorton, W. B. Young Supply Co., Kansas City, Mo.; A. Merkel, Merkel Bros. Co., Cincinnati.

Delegates to the Chamber of Commerce of the United States: George H. Bailey, counselor delegate, Bailey-Farrell Mfg. Co., Pittsburgh, Pa.; and Isador Weil, delegate, Weil-McLain Co., Chicago.

A complete report of the meeting will be published in next week's issue of "Domestic Engineering."

MEMBERS OF T. E. B. FINANCE COMMITTEE MEET IN CHICAGO.

A short meeting of several members of the Finance Committee of the National Trade Extension Bureau was held in the Hotel Sherman, Chicago, on Tuesday, October 19th. Informal discussion took place and Secretary-Manager William J. Woolley stated that a meeting would be held in Pittsburgh the latter part of November, when it is hoped to have every member of the Finance Committee present to take action on next year's schedule.

WESTERN TRADE GOLF ASSOCIATION TO CLOSE SEASON AT CALUMET.

In accordance with a time honored custom, the final tournament of the Western Trade Golf Association will be held at the Calumet Country Club, Homewood, Ill., on Tuesday, October 26th. This will be the members' first visit to the new home of the club since its removal from Burnside, and the meet is being looked forward to with much interest, particularly as the eight season's trophies will be awarded at this time. A special match will take place between F. S. Crumley and F. L. Ottke, for the Vice-President's trophy, over the 18-hole route, medal play with full handicaps, these gentlemen having tied for the honor. Suburban trains leave the Randolph Street station of the Illinois Central Railroad at 7:30, 9:20, 10:40, 11:22 in the morning, city time. The Calumet meet is known far and wide as a real celebration and a large crowd is expected.

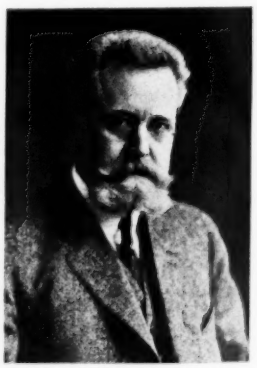
This will bring to a close one of the finest years in the history of the association, and one in which the meets have been exceptionally well attended and competition keen for the flight prizes and season's trophies.

GEORGE B. LIMBERT PASSES AWAY.

George Brown Limbert, founder and president of George B. Limbert & Co., of Chicago, died at his home, 6212 Ingleside Avenue, in this city, on Sunday, October 17th. Mr. Limbert was born in Ripon, Wis., in 1862, and came to Chicago in 1886. He founded the firm bearing his name in 1897. He was a member of the executive committee of the National Pipe and Supplies Association. Two children, Robert M. and Marie Limbert, survive him.

JOHN F. WOLFF CALLED BY DEATH.

John F. Wolff, formerly president of the L. Wolff Mfg. Co., Chicago, and more recently president of the Monument Pottery Co., Trenton, N. J., died at his home, 3649 Pine Grove Avenue, Chicago, on Monday, October 18, in his 62nd year. Mr. Wolff was the oldest son of Ludwig Wolff, founder of the old established firm, the L. Wolff Mfg. Co., now the Wolff Mfg. Co. Mr. Wolff was the first and sixteenth president of the Central Supply Association. He was a graduate of Racine, Wis., College and the University of Hanover, Germany. He was born in Chicago and lived there practically all of his life. He was formerly a member of the Board of Education and he was a 33rd degree Mason and also a member of the Chicago Athletic Club, Chicago Press Club and South Shore Country Club, Chicago. Mr. Wolff is survived by a daughter and two sons.



John F. Wolff.

TO MOVE MAIN OFFICES FROM SANDUSKY TO OSHKOSH.

The Universal Products Co., of Sandusky, O., and Oshkosh, Wis., has completed plans for an increase in its capital stock to $500,000 for the purpose of purchasing the H. C. Doman Co., of Oshkosh. The plans include the removal of the main offices from Sandusky, O., to Oshkosh, Wis. The company will manufacture electric lighting and power plants. The officers of the new company will be L. E. Willson, president; R. K. Schriber, vice-president; Charles H. Eichinger, secretary, and Louis Schriber, treasurer.

THE ANNUAL MEETING OF THE EASTERN SUPPLY ASSOCIATION.

Held at Hotel Astor, New York City, on Wednesday, October 13, 1920.

If any member of the plumbing and heating supply industry is still in the dark as to the why and wherefore of current conditions, and to what the future holds in store for the industry, it can be taken for granted that he was not present at the annual meeting of the Eastern Supply Association, held at the Hotel Astor, New York City, on Wednesday, October 13th. After United States Senator William M. Calder; Walter Drew, counsel of the National Erectors' Association; E. S. Boteler, of the Executive Committee of the National Association of Credit Men; William J. Woolley, of the National Trade Extension Bureau, and other speakers had addressed the meeting, there was little left to be elucidated concerning the various vital topics of the day, which have recently been uppermost in the minds of supply men.

Incidentally, from the standpoint of attendance, enthusiasm, and constructive work accomplished, this meeting broke all records, and will go down in the annals of the organization as the most successful gathering ever held by that body.

President Joseph F. Evans remarked, in introducing Senator Calder, chairman of the Senate Reconstruction Committee, the presence of that distinguished statesman and eminent authority on building construction was in itself gratifying evidence of the importance of the position which the Eastern Supply Association holds in the commercial world.

The senator, in an address which held his audience spellbound, went fully into the housing shortage, the transportation tangle, and the fuel situation, all of which subjects he is probably better qualified to discuss than any man in the country, as he has been conducting an official investigation into all of them.

"I have looked into the fuel charges," he said, "and I want to tell you that no more atrocious thing was ever perpetrated than the profiteering in coal this summer. I believe that we are going to find before our investigation has gone much further that men who had spot coal to sell to A were delivering it to B, in deliberate disregard of their contracts."

Senator Calder's intimation that the time was drawing near when several of these coal profiteers would find themselves facing indictment and prison bars was received with cheers by his audience.

Regarding the freight car situation, the senator predicted a big improvement by the first of the year. He flatly charged the government with being largely responsible for present and recent transportation conditions.

"The railroads were given back to their owners last April," he said, "without any plans being made to deal with the coal supply of New England and the Northwest. The consequences were that three months were lost in handling coal, and this was largely responsible for the costly tie-up of the railroad systems."

The senator also accused the administration at Washington of being considerably to blame for the housing shortage. He declared that it was a grave mistake for the government to have stopped building construction during the war, and pointed out that he had vehemently protested against the step on the floor of the United States Senate.

"Building was one great business which never should have been stopped," he said, "especially as the automobile industry and others less essential than housing construction were allowed to continue.

"Naturally, the action of the government turned labor and capital into other lines, and when the armistice came, it was difficult to get them back to housing. Thus we find that in the year 1919 there was only one-tenth as many dwellings being erected as in 1916, and this year in many large cities buildings going up are only half as many as in 1919, and one-twentieth as many as in 1916."

As a remedy for the situation Senator Calder suggested that government aid should be given to housing construction by revising the present taxation system, and passing laws forbidding the issuing of further tax-exempt securities. This measure, he explained, would go a long way toward bringing mortgage money back to real estate.

The excess profits tax, he declared, ought to be repealed, because it is decidedly unfair to the manufacturers, and the income tax laws modified. He was in favor, too, of the exemption of mortgages from federal taxation for a long term of years, if necessary to stimulate building.

Predicting that "the biggest boom in home-building ever seen" would immediately follow if such measures were taken, the speaker pledged himself to the members of the Eastern Supply Association to fight for the adoption of legislation along those lines, on the floor of the United States Senate, and urged the supply men to back him up.

While he believed that the rent laws recently passed by the New York legislature were justifiable, because of the profiteering practiced by some landlords, Senator Calder expressed the opinion that these laws had contributed greatly to stopping the erection of tenements and houses in New York state. He believed, too, that the newspapers were greatly aggravating the situation by their constant talk of falling prices. The consequence of this talk, he protested, is that men who have built houses are going to have great difficulty in selling at a price that will bring them any profit, and others are afraid to build under the circumstances.

The senator is a builder himself, and he told of a row of small houses he has just completed in Brooklyn, which he will be compelled to sell at a loss because under present conditions it will be impossible to get a price that will equal his investment.

The plumbing he put into these houses, he said, cost $850, as compared to $350 before the war, but with the press predicting an early return to pre-war prices it was difficult to make the public swallow these figures.

E. S. Boteler, former president of the Greater New York Credit Men's Association, held the close attention of the convention for more than half an hour, while he told of the billions of dollars lost to industry by the recent teamsters and longshoremen's strikes in New York, and the railroad strikes throughout the country.

He declared that the country had been on a financial spree, and must now pay the bill.

"I would like to give you a hopeful message," he continued, "but I cannot. I am sorry to say that credits are not down to hard-pan, even now. We have been on a terrible spree, and this is the morning after.

"I am confident that we shall eventually pull through all right. America is too sane to go to pieces altogether. But it is no use closing our eyes to the fact that we are going to be pretty sick for a while."

Walter Drew, counsel for the National Erectors' Association, discussed the labor situation, and made an earnest plea for the open shop, which he declared was absolutely essential to the welfare of American industry. He described in detail the industrial havoc the closed shop had wrought in England.

William J. Woolley, of Evansville, Ind., went fully into the work of the National Trade Extension Bureau, and made the assertion that New York City was the only place which hasn't responded to the plan with enthusiasm.

After adjournment for luncheon, served in the Astor ballroom, the annual election of officers was held. The retiring president, Joseph F. Evans, of the Wyoming Valley Supply & Mfg. Co., Wilkes-Barre, Pa., received a remarkable demonstration of friendship and regard from the members.

Amid cheers which threatened to split the roof of the Hotel Astor the following resolution was unanimously passed, by a rising vote:

"Whereas—Joseph F. Evans has served this association for the past two years in an unusually able and devoted manner, exercising in the important office of president, skill, tact, and decision of a very high order, therefore, be it

"Resolved, That the incoming president be empowered to appoint a committee of three for the purpose of selecting and presenting to Retiring President Joseph F. Evans a fitting remembrance of the esteem and regard in which he is held by the members of the association."

A. M. Maddock, of Thomas Maddock's Sons Co., Trenton, N. J., was elected to succeed Mr. Evans as president of the association. The other officers elected were as follows:

First Vice-President, Frank W. Hubbard, of W. B. Hubbard & Sons, Boston, Mass.

Second Vice-President, George E. Keenen, Bayonne Supply Co., Bayonne, N. J.

Treasurer, Martin Behrer, of Martin Behrer & Co., New York.

Board of Directors: Messrs. Maddock, Hubbard, Keenen, and Behrer, and Philip J. Faherty, Lambertville Pottery Co., Lambertville, N. J.; C. W. Fell, W. A. Case & Son Mfg. Co., Buffalo, N. Y.; James A. Messer, James A. Messer Co., Inc., Washington, D. C.; John A. Murray, New York City; Frank T. Stevens, the Plimpton & Hills Corporation, Hartford, Conn.; R. A. Tate, Utica Plumbing Supply Co., Utica, N. Y.; A. A. Tomlinson, Froehlic Bros., Inc., Philadelphia, Pa.

National Committee Representatives: John A. Murray, New York City; DeWitt Cook, of W. V. Egbert & Co., Newark, N. J.; A. B. McLeod, of LeValley, McLeod, Kinkaid Co., Elmira, N. Y.; Claude W. Owens, of E. G. Schafer Co., Washington, D. C.; H. W. Thorndike, of F. W. Webb Mfg. Co., Boston, Mass.

Chamber of Commerce of United States—National Councilor and Chairman of the War Service Committee: Joseph F. Evans.

Substitute National Councilor: Guilford R. Adams, Samuel Sloan & Co., Rochester, N. Y.

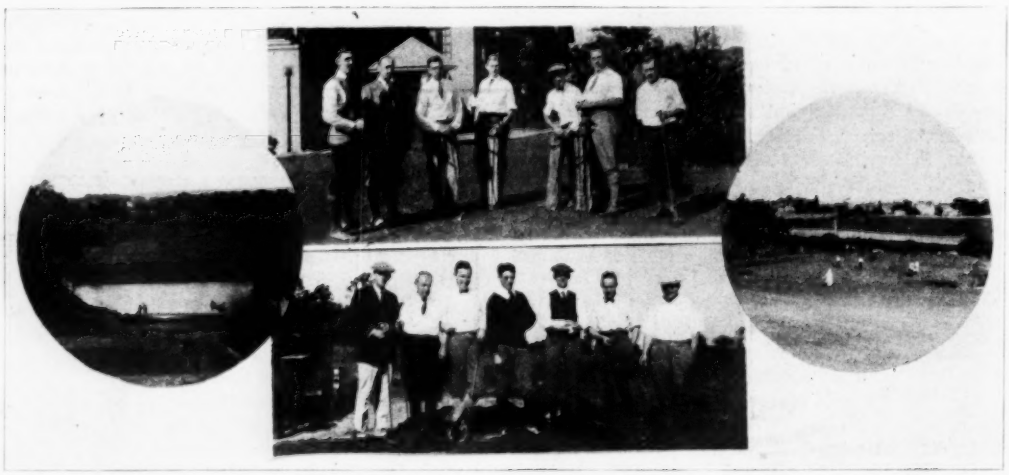
Frank S. Hanley, the veteran secretary of the association, was re-elected to that office amid a display of enthusiasm which closely rivaled the ovation to the retiring president.

Among the other business transacted at the afternoon session was the adoption of a resolution favoring joint meetings of the Eastern Supply Association and the Central Supply Association at intervals to be determined by the executive committees of said organizations.

The following new members were elected to the association: Joseph A. Hoegger, Inc., Jersey City, N. J.; Blue Seal Chemical Co., Roselle Park, N. J.; W. A. Russell & Co., New York; Eastern Sanitary Supply Co., Baltimore, Md.; Empire Machinery & Supply Corporation, Norfolk, Va.; McCambridge Co., Philadelphia, Pa.

With the election of these new members, Secretary Hanley announced that the enrolled membership of the Eastern Supply Association is now 294, which is very close to the 300 goal recently set by the directors.

A feature of this year's meeting was the number of women guests present. Some of them brought their knitting, and made sweaters and neckties while they listened attentively to the proceedings, at the all-day session.



Snapshots of the Fall Meet of the Eastern Trade Golf Association at the Upper Montclair Country Club. The Mental Hazard at the Third Hole is shown in the Left Circular Picture, while that at the Right shows a View of the Ninth Hole. A. S. Armagnac, the Host of the Day, is to be seen at the Extreme Right of the Lower Picture.

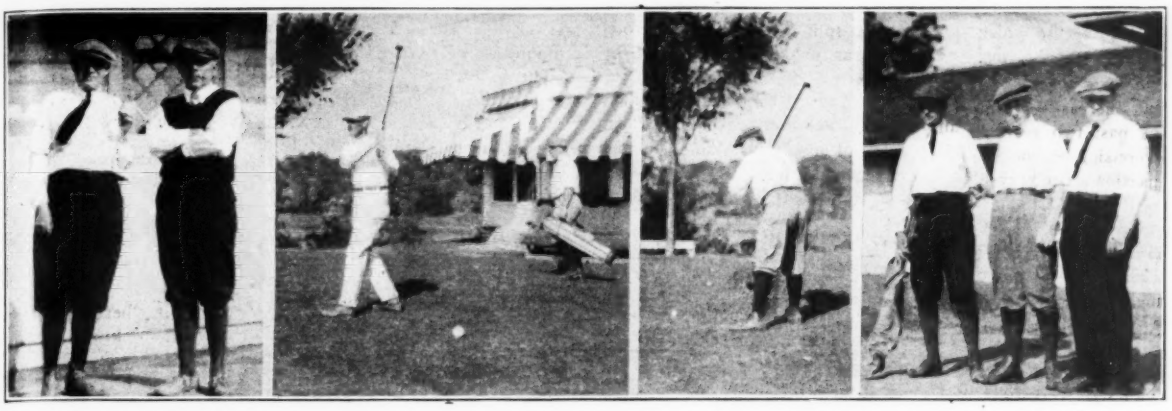
C. F. CHURCH MFG. CO. OPENS CHICAGO OFFICE.

The C. F. Church Manufacturing Co., of Holyoke, Mass., has opened a branch office at 5312 Harper Avenue, Chicago, under the supervision of W. J. Dennis, who will cover the Middle West in conjunction with Geo. W. Collins. Mr. Collins will, however, continue to travel that territory direct from the general office in Holyoke, Mass.

HOWARD COONLEY ON CONDITIONS IN NEW ENGLAND.

Howard Coonley, president of the Walworth Mfg. Co., Boston, Mass., writing under date of October 13th in response to "Domestic Engineering's" request for the company's opinion on market conditions, says: "New England has been peculiarly hard hit by the recent curtailments because of its activity in woolen, textile and machinery lines. It is therefore not strange that manufacturers in this district are apt to be pessimistic. On the other hand, our business reaches out to all parts of the country, and it is our opinion that the present hesitancy is one that is likely to be severe, but not permanent. In fact, it seems to us a wholesome opportunity to shake out of the general market situation, prices and profits that have been exorbitant, and to get down to a more efficient and normal working basis.

"We believe that for the balance of the year purchases will be kept down to absolute necessities, that the prices of the independent steel manufacturers will be abreast with or at



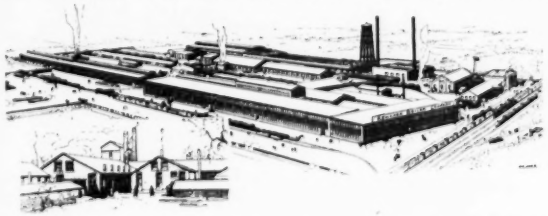
With the Western Trade Golf Association at Rockford, Ill: Left to right, E. L. Dawes and Frank D. Keeler; Frank Houston of Rockford driving; Howard Evans a la Babe Ruth; J. Craig, Tom Wade and Rob Murphy.

least close to those which have been maintained throughout the post-war period by the steel corporation, that prices of all materials, other than those in which there is a desperate shortage, will also decline consistently. We believe on the other hand that the financial situation is already in better shape and that with the election over and the unusual money demands at an end, there is sure to be a return to excellent business.

"With a world food and fuel shortage, with a universal call for additional dwelling, warehousing and office space and with a crying need for better and additional transportation facilities, we do not see how there can be a real depression."

TWELVE THOUSAND ATTEND COMMUNITY CELEBRATION FOR KEWANEE BOILER CO.

In recognition of Kewanee's industrial expansion as evidenced by the new million-dollar addition to the plant of the Kewanee Boiler Co., Kewanee, Ill., a community celebration



The Plant of the Kewanee Boiler Co., Twenty Years Ago and Today.

took place on Tuesday, October 19th, in which twelve thousand people took part. It was a red-letter day in the history of Kewanee, and a lasting tribute to the wonderful progress made by the Kewanee Boiler Co. There was a big dance in the evening to music furnished by the United States Marine Band, lead by Capt. William H. Santelmann. Five minute talks were given by Mayor James H. Andrews, W. H. Lyman, representing the commercial business of Kewanee; George Daniels, representing the old boiler company employes; Frank M. Lay, of the Boss Mfg. Co.; Howard Coonley, president of the Walworth Mfg. Co., Boston, Mass.; Roy L. Woolheather, representing the boiler company employes of the new generation; J. E. Hamilton, representing the Worden-Allen Co., and E. E. Baker, president of the Kewanee Boiler Co.

Personal Mention

Don Neutzling has joined the sales force of the Burnett-Larsh Mfg. Co., Dayton, Ohio, and will cover Eastern Ohio.

C. A. Heckman has succeeded R. J. Maggi as western Pennsylvania representative for the Curtainless Shower Co., New York, and will in future be in charge of the Pittsburgh office at 1404 Arrott Building.

Frank L. Uhl, secretary and general manager of the Detroit Brass & Malleable Works, Detroit, Mich., was married on October 5th to Miss Margaret Hickey, of Detroit, and the happy couple are now touring the east on their honeymoon.

C. A. Kuebler, sales manager of the Burnett-Larsh Mfg. Co., Dayton, Ohio, accompanied by W. J. Lantz, one of the company's field representatives, is on a trip through the west which will take him through Denver, Salt Lake City, San Francisco, Seattle and intermediate points. The return trip will be via the northern route and will take about eight weeks.

Snapshots of some of the Officers of the Kewanee Boiler Co., left to right: B. F. Baker, Vice President and Treasurer; Director C. V. Kellogg, Secretary J. P. Dugger, President E. E. Baker, and Salesmanager H. E. Pursell.

It costs you less and pays you more to sell Ruuds

Sell Ruud Hot Water

Ruud dealers sell the Perfect Hot Water Service that the Ruud gives rather than the appliance itself.

They emphasize these strong selling points:

That Ruud Hot Water is instantly hot at all times;

That its capacity is not limited by any tank;

That it is absolutely safe;

That it is solidly constructed for a long life of usefulness;

That when its cost is divided by the long years of service, it will be found astonishingly low.

Personal salesmanship by you will put over many a sale if you explain these points to your prospects.

Ruud Manufacturing Company Pittsburgh

Ted Harker, of the Chicago Pottery Co., Chicago, has returned from a two weeks' vacation and has started on a trip among the jobbers of the Central West.

W. M. Fawcett, sales manager of the Detroit Heater Corporation, Inc., Detroit, Mich., was in Chicago this week accompanied by **J. Fred Jennings** and **J. R. Ellis,** sales representatives. Mr. Jennings will represent the company in Chicago, while Mr. Ellis will cover Illinois and western Indiana.

CRANE CO. EXHIBITS AT MARINE EXPOSITION.

Crane Co., of Chicago, was one of the chief exhibitors at the Marine Exposition, held in the Coliseum, Chicago, the week of October 18th. The company showed marine plumbing, valves and fittings, and fitted up a model marine bathroom, consisting of built-in bathtub, closet and wall hung lavatory. Valves were displayed by the D. T. Williams Valve Co. and the Lunkenheimer Co., both of Cincinnati, Ohio, and refrigerating equipment was exhibited by the Kroeschell Bros. Ice Machine Co., of Chicago.

BUILDING PERMITS FOR SEPTEMBER.

September, normally the month showing autumnal recession, runs true to form this year and witnesses a definite slump in construction, according to building statistics from 203 cities reporting to The American Contractor. Reports from these cities give a total valuation of $101,834,729 for 38,383 permits issued. August returns from 177 cities gave a total valuation of $110,937,493, making the average valuation per city for August permits $626,750, as against an average valuation of only $501,640 for September. Both these averages are considerably under the computed average monthly valuation per city for the first eight months of 1920.

Comparing August and September activity in 167 cities shows September gains in 71 and losses in 96. Among the important cities showing gains are Los Angeles which leads for the month. Detroit which is second, San Francisco, Washington, D. C., Omaha, Boro of Bronx, Cincinnati, Cleveland, Milwaukee and Baltimore.

Comparison of September activity for this year and for 1919 shows a forty per cent recession for the current year. The per cent of recession for August of this year was 32. September of last year witnessed a falling off from August activity, in fact every September from 1914 has done so with exception of the years 1916 and 1917 when the gain was very insignificant.

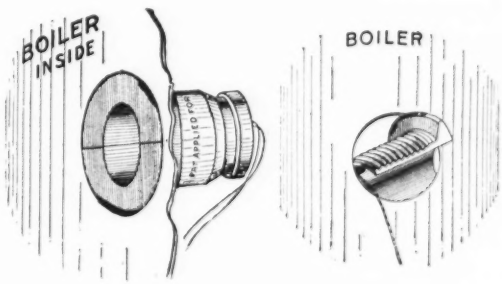
	September, 1920		September, 1919		Per Cent.	
	No. of permits	Estimated cost	No. of permits	Estimated cost	Gain	Loss
Alabama—						
Birmingham	456	$ 396,103	419	$ 303,510	30	....
Arkansas—						
Little Rock	170	721,357	81	145,296	397	....
California—						
Berkeley	117	187,545	104	189,510	....	1
Fresno	265	411,705	158	760,508	....	45
Long Beach	475	1,231,250	280	675,431	81	....
Los Angeles	3,515	7,231,440	1,259	2,447,793	195	....
Oakland	510	798,169	390	574,350	39	....
Pasadena	359	383,562	104	311,582	23	....
Sacramento	142	546,065	143	235,067	132	....
San Diego	338	554,952	151	200,627	176	....
San Francisco	435	1,996,612	482	1,232,921	62	....
San Jose	63	134,733	46	48,751	181	....
Colorado—						
Colorado Springs	59	54,792	50	24,505	129	....
Denver	318	384,650	340	667,750	....	42
Pueblo	51	24,960	42	141,575	....	82
Connecticut—						
Bridgeport	94	136,090	147	521,031	....	73
Hartford	140	1,671,601	140	539,943	209	....
New Britain	147	146,420	118	167,503	....	12
New Haven	122	335,270	163	429,921	....	22
Delaware—						
Wilmington	88	236,455	127	335,873	....	29
District of Columbia—						
Washington	543	3,598,118	577	1,129,508	218	....
Florida—						
Jacksonville	215	442,929	239	377,380	17	....
Miami	179	308,800	45	94,600	227	....
Pensacola	125	50,739	129	67,151	....	24
Tampa	91	127,710	104	59,787	113	....
Georgia—						
Atlanta	219	1,076,656	291	1,113,522	....	3

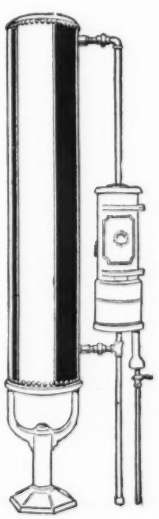
	September, 1920		September, 1919			
	No. of permits	Estimated cost	No. of permits	Estimated cost	Per Cent. Gain	Per Cent. Loss
Augusta	162	105,444	161	97,005	8	....
Savannah	56	283,450	78	228,490	24	....
Idaho—						
Boise	106	33,644	62	46,090	....	27
Illinois—						
Chicago	291	3,970,900	654	13,483,600	....	70
Decatur	55	162,800	78	209,700	....	22
Evanston	37	63,085	17	13,075	384	....
Peoria	64	73,306	89	148,325	....	50
Quincy	2	8,200	3	43,000	....	80
Rockford	120	193,435	185	331,865	....	41
Springfield	114	136,185	85	1,163,335	....	88
Indiana—						
Elkhart	1	500	10	29,300	....	98
Fort Wayne	72	123,480	83	189,655	....	34
Hammond	42	118,600	56	178,115	....	33
Indianapolis	742	1,696,314	749	1,179,469	43	....
Richmond	25	15,350	29	64,170	....	76
South Bend	183	169,080	184	626,519	....	73
Terre Haute	74	71,715	81	100,023	....	28
Iowa—						
Cedar Rapids	114	252,200	69	445,000	....	43
Davenport	88	54,415	98	222,485	....	75
Des Moines	67	161,485	150	1,012,330	....	84
Dubuque	23	38,360	33	113,680	....	66
Mason City	67	113,020	79	597,340	....	81
Sioux City	126	254,700	151	610,116	....	58
Kansas—						
Kansas City	47	73,655	43	256,830	....	71
Leavenworth	2	19,000	5	11,000	72	....
Topeka	50	170,095	80	119,585	42	....
Wichita	172	254,160	141	372,781	....	31
Kentucky—						
Covington	41	52,450	27	54,535	....	3
Lexington	59	29,770	81	123,840	....	75
Louisville	203	316,250	152	341,465	....	7
Louisiana—						
New Orleans	111	290,839	88	540,300	....	46
Shreveport	182	501,324	152	306,636	63	....
Maine—						
Portland	48	33,150	76	107,070	....	69
Maryland—						
Baltimore	855	1,647,744	594	3,462,122	....	52
Cumberland	30	55,726	36	235,670	....	76
Massachusetts—						
Beverly	25	167,000	35	24,821	595	....
Boston	594	2,047,385	600	1,910,924	7	....
Brockton	65	94,185	50	137,135	....	31
Cambridge	84	415,751	89	721,592	....	42
Chelsea	20	24,095	14	100,380	....	75
Chicopee	37	58,500	32	149,050	....	60
Fall River	54	248,080	49	151,640	64	....
Fitchburg	37	78,465	37	284,595	....	72
Haverhill	35	57,300	24	53,800	7	....
Holyoke	26	411,725	28	56,320	634	....
Lawrence	51	270,450	41	98,345	175	....
Lowell	73	87,585	111	1,062,645	....	91
Lynn	35	25,415	33	16,755	56	....
Medford	28	13,650	60	134,240	....	89
New Bedford	72	869,800	53	317,300	174	....
North Adams	6	3,350	7	4,400	....	23
Quincy	56	71,265	88	164,180	....	56
Salem	62	42,286	59	35,350	20	....
Somerville	41	29,695	41	55,864	....	46
Springfield	109	289,105	133	438,032	....	34
Waltham	26	33,390	30	68,550	....	51
Worcester	205	369,360	213	646,604	....	42
Michigan—						
Battle Creek	75	51,050	116	54,817	....	6
Detroit	1,770	6,766,065	2,553	17,343,085	....	60
Flint	432	316,800	779	3,824,444	....	91
Grand Rapids	197	138,019	156	270,705	....	49
Jackson	80	131,260	99	234,330	....	43
Kalamazoo	31	66,460	33	172,500	....	61
Lansing	124	85,665	201	317,825	....	73
Pontiac	126	87,660	.....	.....	....	....
Saginaw	184	212,112	253	238,133	....	10
Minnesota—						
Duluth	188	169,890	234	313,180	....	45
Minneapolis	639	1,117,365	716	1,892,155	....	40
St. Paul	264	535,128	314	1,002,493	....	46
Missouri—						
Kansas City	328	582,300	390	2,117,625	....	72
Springfield	59	52,625	31	13,975	300	....
St. Joseph	64	118,437	65	104,300	13	....
St. Louis	688	785,340	687	2,844,980	....	72
Montana—						
Butte	53	29,000	76	113,160	....	74
Nebraska—						
Lincoln	39	48,395	62	109,745	....	55
Omaha	109	487,600	203	1,046,380	....	53
New Hampshire—						
Manchester	77	31,604	86	133,820	....	76
New Jersey—						
Atlantic City	113	177,468	104	203,508	....	12
Bayonne	30	261,000	50	604,500	....	56
Camden	92	439,055	98	249,353	76	....
East Orange	54	130,895	73	567,010	....	76
Elizabeth	60	321,690	77	393,369	....	18
Hoboken	12	17,225	23	27,020	....	36
Jersey City	106	469,910	105	329,701	42	....
Newark	241	691,305	278	2,428,445	....	71
Orange	53	68,365	42	49,599	38	....
Passaic	28	367,890	40	169,400	117	....
Paterson	135	202,455	149	455,452	117	....
Plainfield	20	63,750	.....	.....	....	....
Trenton	93	140,835	111	438,411	....	67
Nex Mexico—						
Albuquerque	30	42,753	31	43,409	....	1

Ideal Boiler Spud

Put an end to water heater installation troubles!

The Ideal Spud provides a means for readily connecting a gas heater to a boiler. Takes less time and material to install. No need to disturb old pipes. Assures a water tight, air tight, steam tight connection. Insures a cleaner and better circulation. Pipe fitting can be standardized. Makes a neat appearing job.





Two exclusive features of our spud—the full and complete flange which holds spud from inside of boiler and bronze washer which shapes itself to conform with surface of boiler. Makes an ideal connection.

To install a water heater with Ideal Boiler Spuds, drill two holes in side of boiler—one near top and one near bottom. We furnish a special Ideal Drill for this purpose.

Take both halves of Spud and drop in sideways, at same time holding string. Then draw up one at a time into place so that stems of Spud extend from hole. Slip over bronze expansion washer and then screw up coupling, which gives you a watertight, compression-tight connection.

WRITE TODAY TO

COLONIAL METAL PRODUCTS CO.
391 EAST 149th STREET
Areco Building
NEW YORK CITY

How do you buy a Radiator Trap?

ON PRICE? You'll be agreeably surprised at the price of the Johns-Manville Radiator Trap.

On design and operation? The simplicity of the Johns-Manville Radiator Trap does away with any need for adjustments once the trap is in place.

On reputation? The name Johns-Manville on a Radiator Trap means that you can use it with absolute confidence, just as thousands of others have done, because you know that the Johns-Manville organization stands squarely behind every one. Write any Johns-Manville Branch for descriptive booklet and price list.

How it works

The only moving part of the Johns-Manville Radiator Trap is a hollow copper ball. This ball floats up and down with the water level in the trap. When the water level drops, the ball drops, gradually rolling over the discharge orifice of the trap, thus throttling down the outflow and maintaining sufficient water in the trap to provide a water seal and prevent leakage of steam. When the water level raises the ball the discharge orifice is exposed and the water is free to flow out of the trap.

JOHNS-MANVILLE COMPANY
Madison Ave. at 41st St., New York City
10 Factories—Branches in 64 Large Cities
For Canada:
CANADIAN JOHNS-MANVILLE CO., Ltd.
Toronto

Through—
Asbestos
and its allied products
JOHNS-MANVILLE
Serves in Conservation
Heat Insulations, High Temperature Cements, Asbestos Roofings, Packings, Brake Linings, Fire Prevention Products

JOHNS-MANVILLE
Radiator Trap

	September, 1920		September, 1919			
	No. of permits	Estimated cost	No. of permits	Estimated cost	Per Cent. Gain	Per Cent. Loss
New York—						
Albany	229	230,920	163	299,355	....	22
Auburn	18	26,325	19	41,187	....	36
Binghamton	223	93,898	229	155,106	....	39
Buffalo	301	717,000	448	1,256,000	....	42
Mt. Vernon	43	72,475	24	95,995	....	24
Newburgh	8	13,960	12	19,460	....	28
New York City:						
Boro Bronx	304	1,935,690	346	2,539,837	....	23
Boro Richmond	143	468,692	132	370,979	26	....
Boro Brooklyn	799	4,985,275	1,153	7,354,078	....	32
Boro Manhattan	281	5,825,400	293	4,738,425	22	....
Boro Queens	812	2,665,692	1,046	4,606,117	....	42
Niagara Falls	66	418,900	81	313,415	33	....
Rochester	377	647,029	311	1,275,765	....	49
Schenectady	71	118,400	88	322,590	....	63
Syracuse	185	460,260	223	978,640	....	52
Troy	42	28,143	32	98,715	....	71
Utica	86	581,335	47	234,550	147	....
Yonkers	57	377,100	49	353,400	6	....
North Carolina—						
Charlotte	26	394,450	39	116,443	239	....
Wilmington	20	357,000	12	80,650	346	....
North Dakota—						
Fargo	32	212,000	47	401,800	....	46
Grand Forks	7	25,950	13	6,750	317	....
Ohio—						
Akron	306	1,817,356	732	2,973,465	....	39
Canton	145	284,440	205	729,190	....	60
Cincinnati	1,146	1,021,275	1,197	1,159,475	....	11
Cleveland	1,125	3,364,975	1,217	6,285,625	....	46
Columbus	224	823,360	332	625,980	31	....
Dayton	155	416,640	208	511,542	....	18
Hamilton	30	57,225	32	160,139	....	64
Mansfield	21	22,050	63	319,555	....	92
Sandusky	18	23,175	30	65,360	....	64
Springfield	34	49,315	93	324,315	....	84
Toledo	316	856,642	351	986,663	....	12
Youngstown	122	226,800	231	703,230	....	67
Zanesville	17	8,562	28	28,070	....	69
Oklahoma—						
Muskogee	18	51,335	6	16,000	219	....
Oklahoma City	110	352,309	175	1,056,614	....	66
Tulsa	152	477,385	172	460,060	3	....
Oregon—						
Portland	1,074	802,860	900	1,370,035	....	41
Pennsylvania—						
Allentown	47	325,050	43	388,195	....	16
Altoona	87	39,932	88	92,512	....	56
Bethlehem	23	34,682	22	130,850	....	73
Erie	108	147,214	151	769,430	....	80
Harrisburg	31	88,925	48	276,150	....	67
Johnstown	56	590,000	31	282,000	109	....
Lancaster	42	85,280	26	73,065	16	....
McKeesport	24	141,895	24	72,550	94	....
Philadelphia	954	2,686,995	1,223	5,234,425	....	48
Pittsburgh	307	863,731	434	1,170,851	....	26
Scranton	55	103,490	40	186,260	....	44
Wilkes-Barre	40	357,137	62	139,244	156	....
York	21	17,960	18	97,835	....	83
Rhode Island—						
Central Falls	8	2,100	17	14,150	....	85
South Carolina—						
Charleston	34	99,173	28	47,815	110	....
South Dakota—						
Sioux Falls	59	49,325	55	251,440	....	80
Tennessee—						
Chattanooga	227	74,128	216	168,925	....	56
Knoxville	105	799,916	84	155,700	415	....
Memphis	198	343,195	169	1,006,400	....	65
Nashville	272	124,097	344	361,266	....	65
Texas—						
Austin	15	15,340	15	25,910	....	40
Dallas	224	1,065,997	130	1,076,118	....	1
El Paso	104	378,137	95	206,547	83	....
Fort Worth	140	322,734	184	2,115,187	....	84
Galveston	355	46,389	315	92,191	....	49
Houston	368	424,307	408	863,655	....	50
Utah—						
Ogden	27	48,150	37	117,605	....	59
Salt Lake City	72	88,360	90	338,273	....	73
Vermont—						
Burlington	14	17,750	25	20,185	....	12
Virginia—						
Norfolk	78	238,680	106	841,137	....	71
Portsmouth	45	62,153	76	243,902	....	74
Richmond	173	167,693	200	586,143	....	71
Roanoke	64	70,145	79	90,130	....	22
Washington—						
Everett	180	177,256	82	44,135	302	....
Seattle	1,046	865,330	1,356	1,340,695	....	35
Spokane	189	277,100	150	375,000	....	26
Tacoma	359	495,835	375	252,370	96	....
West Virginia—						
Charleston	43	140,235	81	267,615	....	47
Huntington	82	230,147	93	311,935	....	26
Wheeling	52	30,345	53	119,245	....	74
Wisconsin—						
Kenosha	161	322,479	236	423,912	....	23
Madison	62	109,508	23	167,860	....	34
Milwaukee	442	1,920,874	448	2,459,983	....	22
Oshkosh	33	55,774	.....	49,072	12	....
Racine	103	142,248	.....	.....	....	....
Sheboygan	75	131,394	70	53,892	142	....
Wyoming—						
Cheyenne	34	54,824	20	79,905	....	31
Total	38,383	$101,834,729	39,489	$170,818,827	....	40

Illinois

Chicago and Vicinity.

Plans have been completed for the construction of a $6,000,000 postoffice terminal for parcel post and transient mail in conjunction with the new Union station. Work on this structure is to begin at once. The building will be constructed by the Union Station Co. and leased to the government for a period of twenty years. The structure, which will be 800 ft. in length, 80 ft. in width, and six stories high, not counting the basement, and each floor having 60,000 sq. ft. of floor space, will require eighteen months to build, contractors say. The building will be located between Harrison and Van Buren Streets, just west of the river.

C. S. Lawrence, 2925 West Madison Street, and Harry Peckham, Jr., 2345 West Roosevelt Road, have secured the plumbing and heating remodeling jobs, respectively, on the garage building at 1040-1050 Arcade Place.

Carl John Stein Co., 853 South State Street, is to remodel the plumbing system in the gymnasium of the Illinois Athletic Club at 112 South Michigan Avenue.

Dornbos Bros., 2039 West Twenty-first Street, will install the plumbing system in the $75,000, one-story wet wash laundry building being erected for E. Tomasek on Twenty-second Street, near Fifty-fifth Avenue, Cicero.

The Thomas Conlin Plumbing & Heating Co., 3978 Cottage Grove Avenue, has been awarded the plumbing contract on the $400,000, one and two-story manufacturing plant and office building being erected on Crawford and Wrightwood Avenues for the Illinois Glass Co.

B. J. Farwell, 410 Sherman Street, has been awarded the contract to install plumbing in the Downtown Club, to be erected at 619 South Wabash Avenue. The contract amounts to $9,000.

The Olson Furnace Co., 217 West Lake Street, has secured the heating contract on the six $10,000 residences now under construction for Mrs. Wills at 5000 to 5018 Wilson Avenue.

Other Cities in the State.

Royer & Schlie, 545 North Water Street, Decatur, have been awarded the contract to install plumbing and heating in the one-story, 80x400 ft. manufacturing building under construction for the L. P. Halladay & Co., on East Eldorado Street.

Indiana

Indianapolis.

The plumbing contract on the new addition to be built at School No. 2, 2815 English Avenue, Indianapolis, has been awarded to the Cotton-Wiebke Co., of 1720 East Tenth Street, by the board of school commissioners. The heating contract on the new addition has been awarded to W. H. Johnson & Son Co., 330 East St. Joseph Street.

Plans are being drawn for the erection of a new educational building, to cost about $100,000, at Delaware and Walnut Streets, Indianapolis. The building will be two stories high and will be erected for the Central Christian Church.

The firm of Strong Bros., 656 East Sixteenth Street, has been awarded the contract for the installation of the heating, ventilating and plumbing systems in the new school building that is to be erected at East Tenth and Dearborn Streets, Indianapolis, at a cost of $100,000.

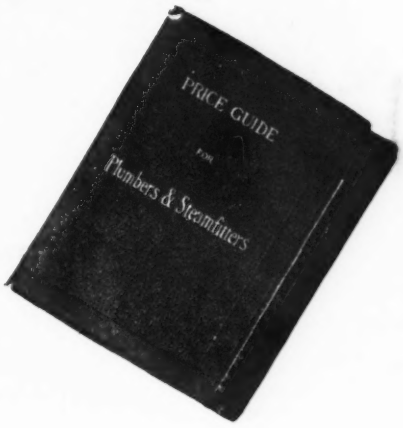
Contracts will be awarded soon for the installation of plumbing and heating systems in two new double houses that are to be erected at Thirty-second Street and College Avenue for Henry Caldwell. The two houses will cost approximately $30,000.

Work will be started soon on the erection of a new six and nine-story factory building at Blackford and Chesapeake Streets, for Kingan & Co., Ltd. The building, which will be used for the manufacture of butterine, will be erected at a cost of $250,000.

Fort Wayne.

With only 143 new residences erected in Fort Wayne this year, the city's housing situation, described as critical six months

The Sure Way to Figure Prices



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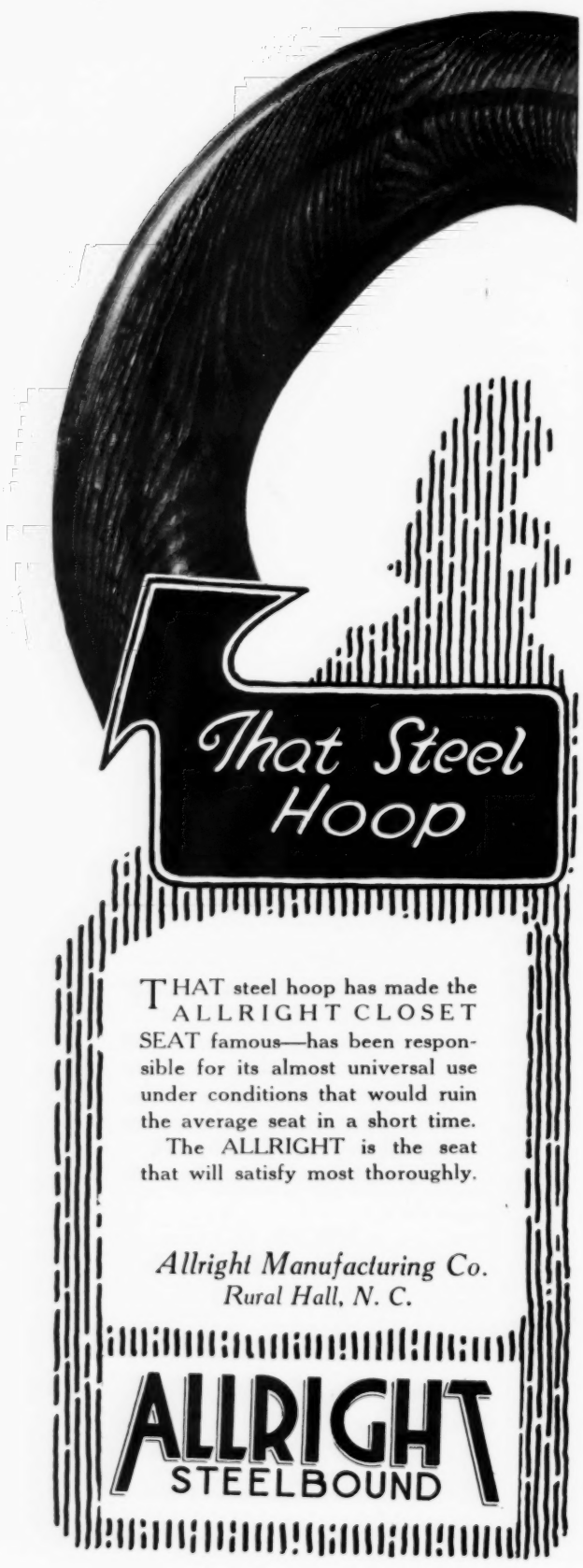
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ago, has grown worse, according to men connected with the building trades, who say that the city is short at least 2,000 homes. High cost of building materials this year is held responsible for the fact that fewer homes have been erected and the same causes forced a building campaign, with a slogan of "A Thousand New Homes for Fort Wayne in 1920," to fall flat. Whether another campaign will be started next year depends entirely on the cost of material, the building men say. Including September's figures, building costs so far this year total $2,353,488, an amount much greater than all 1919.

The county commissioners in Allen county last week awarded contracts for the erection of a new dairy house at the new county farm. The heating and plumbing contract was awarded to P. B. Arnold, of Fort Wayne, at a bid of $1,500.

Bids for the installation of plumbing and heating and for general construction work on the new junior high school to be erected at Fort Wayne at a cost of $500,000 were received by the board of education up to Thursday, October 21st.

Evansville.

Building permits and the valuation of construction work at Evansville during the month of September were less than during the same month in 1919, according to figures compiled by Edward Kerth, building commissioner. In the last month seventy-five permits were issued on property valuations of $99,001. The number issued for the same month last year was 131, with property valuation of $107,841.

The firm of John E. Woolley & Sons, of 128 Main Street, Evansville, has just completed the installation of a vacuum steam heating system in the Vulcan Plow Company's new factory building.

Plans are being drawn for the erection of a new story and one-half residence to be erected at Evansville for N. W. Bryant. The residence will cost about $12,000.

Other Cities in the State.

Jesse Mumaugh, trustee of Pipe Creek township, Miami county, has let a contract for the erection of a new consolidated school building at Nead, four miles south of Peru, to replace a building that was destroyed by fire. The plumbing and heating contracts were awarded to Walter Lillard, of Peru.

A new store building, to cost approximately $100,000, is to be erected at the corner of Main and Sixth streets, Lafayette, for the Hub Clothing Co. The general contract has been let to A. E. Kemmer, 649 North Seventh Street, Lafayette, and contracts for the installation of plumbing and heating systems will be awarded later.

Fred Dorsey, of Frankfort, has received the contract for the installation of heating and plumbing system in a new apartment building to be erected for Mrs. Belle Herz, 707 North Main Street.

Pennsylvania

Pittsburgh.

The Stinson-Kennedy Co., 121 Fourth Avenue, has the plumbing contract on the Gulf Refining Co.'s building, now being erected in Cumberland, Md.

Weldon & Kelley Co., 427 Fourth Avenue, will install the plumbing in the plant being erected in Cumberland, Md., for the Kelly-Springfield Tire Co.

Deer & Ober, 1001 Chestnut Street, have the contract to install plumbing and heating in the National Sweets Co.'s new building on Pennsylvania Avenue, near Lexington Street.

The George H. Soeffel Co. has secured the plumbing contract, and the McGinness-Smith Co. the heating contract on the large paper warehouse being erected for the Pittsburgh News Co., at Third and Ferry Streets.

The Hughes Heating Co. has the contract to remodel the heating system in the Public Safety building on Sixth Avenue.

E. J. Schumacker, East Street, has recently completed the installation of plumbing in the Gould Theater on East Ohio Street, and has secured the contract to make sewer and water line adjustments on the East Ohio Street widening project.

A masquerade party and dance is to be given by the Ladies' Auxiliary of the Master Plumbers' Association, at the Lincoln Club, Craft Avenue, on Wednesday night, October 27th. Mrs. W. P. Reardon, Mrs. F. J. Voelker, Mrs. Sam A. Patton and Mrs. V. E. Warren will be in charge of this gala affair.

Wey Bros., 707 Middle Street, have been awarded the plumbing contracts on the fifteen-apartment building that is to be erected on North Negley Avenue, and on six residences in Bellevue. They also have completed the installation of plumbing and heating in three other new residences in Ben Avon.

Kentucky

Louisville and Vicinity.

Announcement was made last week that all plumbing and heating fixtures at Camp Taylor, Louisville, would be taken out of the building and stored in a guarded warehouse until the sale of the camp. Marauders have been removing equipment steadily, as the camp has been deserted except for a detachment of 300 men, who do guard duty.

A company is being organized in Louisville to buy the camp, or at least place a bid upon it when the Government gets ready to sell. It is understood that it is planned to dismantle the camp and market the material.

F. A. Clegg & Co. report good heating contracts on the office of Inman Veneer & Panel Co., the First Presbyterian Church Sunday School, New Albany, Ind.; First Unitarian Church, Louisville, and the Sauer residence, Paris, Ky.

Bowling Green, Ky., reports that The Mackle Construction Co., Atlanta, Ga., is seeking to finance an eight-story, half million dollar hotel to be erected at Bowling Green, which is growing fast as the headquarters of the Western Kentucky oil district. The Western Kentucky Refining Co., at Bowling Green, Ky., is planning an oil refinery with a capacity of 1,000 barrels a day.

Ohio

Cleveland and Vicinity.

A document that will prove of inestimable value to master plumbers' associations, throughout the country, has been issued by Secretary Ed F. Bohm, of the Plumbing Secretaries' National Conference. The document is a digest of labor agreements from 18 different cities, and shows exactly what are the conditions between master plumbers, journeymen and others identified with the plumbing industry. The secretaries who have joined the conference and have paid their dues will not only receive the digest in its present form, but will receive additions to it as other cities send in their quota of information on this subject. The digest constitutes nearly a score of pages of printed matter, and, aside from the valuable information contained, is obviously a monumental work. In fact it is the result of virtually continuous effort on the part of Mr. Bohm and his staff ever since the conference met at the Pittsburgh convention of the National Association of Master Plumbers. The digest in detail covers both journeymen and apprentice wage agreements. The information it contains will be available to any association whose secretary takes membership in the conference up to the next annual meeting. The conference has thirty-five members in good standing and is growing all the time. Among the newest members to be added are Fred Pickwick, secretary, Master Plumbers' Association, Manchester, N. H.; Peter M. Munn, assistant secretary, Master Plumbers' Association, Chicago; E. Steffan, North Hudson Master Plumbers' Association, Hudson County, N. J.

With a view toward getting better co-operation on the employment of apprentices, a plan for joint consideration of this question is going forward with the Associated Plumbing Contractors of Cleveland. Heretofore the local journeymen's union has had control over the distribution and work of apprentices. A committee of three representing the Associated Plumbing Contractors and a like committee from the union, will presently hold meetings at which there will be a revision of rules, giving power of both employers and employes to discuss the apprentices activities. On the committee for the master plumbers are John J. Comerford, Charles F. Seifried and Charles Mallett.

A new auditing committee for the Associated Plumbing Contractors of Cleveland was appointed at the October meeting of that body. R. C. Osbourne, John Drees and Samuel Apple will look after the finances of the association.

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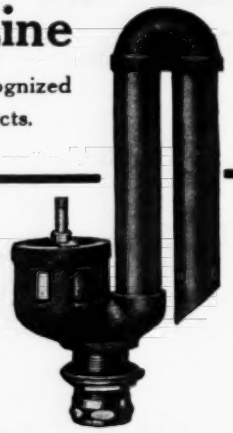

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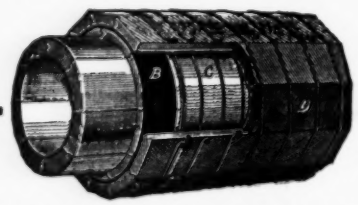

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The Century Club, comprising the larger plumbing contractors in the downtown district, will resume its weekly meetings this month, to be held in association headquarters, The Arcade.

The Stamberger Co. and O. Simon are among the latest contracting firms to join the Associated Plumbing Contractors of Cleveland.

The building code committee of city council appears to be getting somewhere in the discussion of the much mooted question of whether licensing of journeymen plumbers shall be abolished or not. Following an inquiry into the conduct of the city plumbing inspector and the board of plumbing examiners' offices the code committee, through Chairman W. E. Potter, announces that elimination of the licensing ordinance will doubtless clear the atmosphere regarding getting sufficient number of practical plumbers into Cleveland. It is the belief of this body that there has been sufficient information forthcoming through these recent inquiries to induce the council to abolish the ordinance. The claim is that building is hampered and that the license practice also injures the public, whether directly interested in building construction or not. The alternative offered is that a board be appointed to examine journeymen to see that they are able workmen. In the event that the council does not entirely abolish the licensing feature, it is expected to pass a measure that will allow journeymen coming to the city to take out temporary permits to work.

In connection with the appeal to the council to eliminate the licensing feature, the building code committee also will seek to have simpler plumbing fittings favored in the code.

At the same time Cleveland is seeking to simplify its plumbing code the Village of West Park, to the west of the city, also is considering revision of its plumbing code. This will affect contractors who are members of the Brookside Club more than the members in other district organizations of the local trade.

The Heating and Piping Contractors' Cleveland Association is planning revision of the by-laws in its organization. M. L. Crowell, of the Crowell & Smith Co.; W. B. Van Sickel, F. M. Dougherty and W. C. Clark are working on this matter. Julius Roemer, of the J. Roemer Heating Co., has been appointed a member of the administration committee. Walter Klie, of the Smith & Oby Co., has been named for the conference committee.

H. C. McCormick, who has been a member of the Rowe-McCormick Co., has resigned from that firm, and plans to enter the plumbing branch of the business on his own account. The heating firm will be continued under its original name.

The Koblitz Plumbing & Heating Co. is among the new members enrolled in the Heating and Piping Contractors' Cleveland Association.

Both heating and plumbing interests are occupied largely on old contracts, which had been accumulating since the suspension of activities this past summer. New work in both factions consists largely of small contracts. All shops are busy.

New Jersey

National Officers Visit North Hudson Master Plumbers' Association.

In addition to having an opportunity to meet its State Officers, nearly all of whom were present, the Master Plumbers' Association, Inc., of North Hudson, N. J., was honored by a visit from D. F. Durkin, Jr., president of the National Association of Master Plumbers, National Director W. J. Farrell, and William J. Woolley, manager of the National Trade Extension Bureau, Evansville, Ind., at its special meeting, held at Franz's Hall, Union Hill, N. J., on Tuesday evening, October 12th.

Because of the presence of these distinguished guests, and the interesting addresses they made, this meeting will be long remembered by the North Hudson Master Plumbers who had the good fortune to attend—and according to Secretary Steffen, it was a one hundred per cent meeting from the standpoint of attendance.

The members had turned out in full strength to greet the state officials, but the presence of the other visitors was a great surprise to them, as their coming had not been announced. In their honor, President William T. J. Orriss suspended the regular order of business after the reading of the minutes, and the whole evening was devoted to hearing the addresses of the guests.

National President Durkin told of the National Association, its aims, benefits, and what he hopes to accomplish during his

term. He predicted a return to normal conditions in the building trades in the very near future, and pointed out that the gradual reduction of prices of raw materials indicated a rapid resumption of building activity, with the plumbing industry swinging into line.

State President William A. Snudden, who followed Mr. Durkin, told of his ambition to bring the membership of the State Association to 1,000, and asserted that the organization had already reached the 860 mark and was going strong.

William J. Woolley stirred his audience to great enthusiasm by his description of the work of the Trade Extension Bureau. He urged the Master Plumbers of New Jersey to educate themselves in expert business methods so as to be able to compare favorably with business men in other lines.

Mr. Woolley quoted statistics to show that last year 300,000 more phonographs were sold in the United States than bathtubs, and argued that this was largely due to the fact that the average master plumber was not a sufficiently good salesman to get all the business that was rightly his.

"Salesmanship in the plumbing and heating industry is going to have more to do with the price situation than any other thing," the speaker declared. "It is a lamentable fact, but true, that the average plumber hasn't the slightest idea of how to cope with the problem of separating the public from its money."

Mr. Woolley also deplored the lack of system in the average plumber's shop. A widespread investigation by his Bureau, he told his audience, had brought to light that the majority of plumbers lost four hours every day because of this lack of system. The plumbing and heating industry, he declared, is six per cent efficient and ninety-four per cent inefficient.

His audience took these criticisms in good part, and expressed a desire to co-operate with the National Trade Extension Bureau in conducting an educational campaign in the State of New Jersey.

Following up Mr. Woolley's talk on efficiency, National Director W. J. Farrell, State Organizer Beck, State Vice-President Frank Fills, of Trenton; State Secretary Walter A. Grubb, of Newark; State Treasurer George Werner, of Orange, and State Trustees William Delhagen, of Paterson, and Joseph A. Durr, of Montclair, also contributed to the program with speeches on general organization aims.

In the opinion of all present, however—guests as well as members—none of the visiting orators "had anything on" President Orriss, of the North Hudson Master Plumbers' Association, in the matter of eloquence.

President Orriss' graceful speech of welcome to the distinguished guests was unanimously voted the hit of the evening, and there is a rumor afloat in West Hoboken that the geniel presiding officer of the local Association is slated for a seat in the United States Senate.

At the conclusion of the meeting, Secretary E. Steffen also came in for a lot of congratulations. It was realized that the record attendance was largely due to his zeal and energy.

New York

The Building Situation in New York City.

Those members of the local plumbing and heating fraternity who last week were frankly skeptical as to the good that was likely to result from the investigation of the Lockwood Joint Legislative Committee into the housing shortage situation are now taking a much more optimistic attitude. Developments of the past few days have caused these cynics to agree with President Kennedy of the Greater New York Master Plumbers' Association, that the powers conferred on Senator Lockwood's Committee by the Legislature at its special session are likely to accomplish a great deal in the way of solving the housing construction problem.

The chief of these encouraging developments was the formal announcement by Senator Lockwood that Samuel Untermeyer has been invited to act as special counsel of the Committee, and has accepted the appointment under conditions which indicate that the investigation is to be thorough and far-reaching.

Taking into consideration that Mr. Untermeyer was one of the first to make the charge that the high price of building materials was the result of a vast conspiracy of nation-wide scope, his selection to conduct the investigation is regarded as an evidence of the good faith of the Lockwood Committee, and the determination of that body to get at the truth, no matter who is hit. Before accepting the appointment, the eminent attorney, who has figured as special counsel in several

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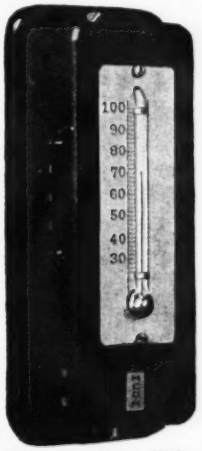

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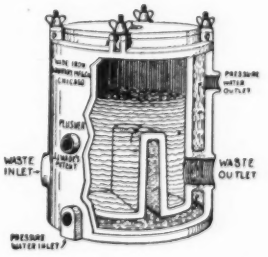

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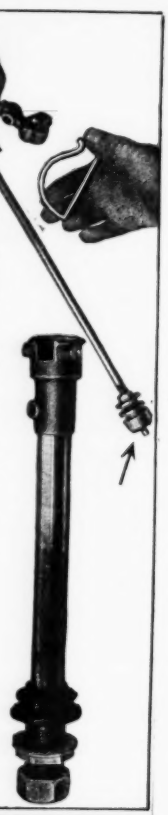
STANDARDIZED FITTINGS

Send for information regarding the Ampinco package of Standardized Tank Trimmings.



The AMERICAN PIN CO.
WATERBURY, CONN.
PLUMBING GOODS DEPARTMENT

"CAPITOL" VALVES

stand on their own merits. Their reputation for highest quality and satisfactory service was established many years ago.

Uniform in size, thickness and quality.

Gate
Union
Corner
Lock Shield

We also make a full line of Boiler Trimmings and Gauges.

Write for Catalog

CAPITOL BRASS WORKS
Detroit, Mich.

big Congressional and other important investigations, exacted a promise from Senator Lockwood that he would be absolutely unhampered in his work, and unrestricted in his examination of witnesses. It was agreed, too, that the Committee will deal sternly with witnesses who refuse to appear or to answer all questions.

Mr. Untermeyer will begin the examination of witnesses in the Aldermanic Chamber of the City Hall, this week.

Any witnesses who fail to appear or who refuse to testify will be placed before a State or Federal Grand Jury without hesitation, indicted on the same day and their trial set for within a week, under Article 124 of the Penal Code. There will be no clemency shown to witnesses who may attempt to balk the investigation.

According to the plans for co-operation with District Attorney Swann and United States Attorney Caffey, a State and a Federal Grand Jury will always be at the disposal of the committee, so that prompt action may be taken against witnesses impeding the progress of the inquiry.

Although it is the announced intention of the Lockwood investigators to look into every phase of the building materials situation, so far as can be learned no dealers in plumbing or heating supplies have as yet been subpoenaed, nor have any intimations been made that the manufacturers or jobbers of sanitary and heating equipment are suspected of being involved in the alleged conspiracy to control artificially the prices of building materials.

Leading factors in the local plumbing and heating supply field, interviewed by a representative of "Domestic Engineering," were unanimous in declaring that they were not at all perturbed as to what the Lockwood Committee's probe might bring to light, so far as their industry was concerned.

"Whether there is any basis for these allegations about a building material trust is a question that I am not competent to discuss," said one representative supply man, "but I do know that if such a combination in restraint of trade does exist the men who furnish the heating and sanitary equipment of housing construction have had no hand in it.

"I have no idea whether it is Mr. Untermeyer's intention to summon any of the men in our line to the witness stand. Inasmuch as heating and plumbing constitutes nearly ten per cent of the total cost of housing construction, it is possible, of course, that an inquiry into our industry might be considered a pertinent part of the investigation. But we are not worrying. Our consciences are perfectly clear, and we are serenely confident that, if we are called, we shall have no difficulty in satisfying the Lockwood Committee and the public that the present high cost of pipe, enamelware, boilers, pottery, brass goods, earthenware, and all other supplies is thoroughly justified.

"There may be individual cases where small jobbers and retailers have taken advantage of the existing shortage to practice profiteering, but these, I am convinced, are the exceptions rather than the rule. I am in a position to state positively that, generally speaking, there has been no profiteering in our trade, and that the present price situation is solely the result of the scarcity of labor and fuel, bad transportation conditions, and other economic factors."

In addition to investigating the building materials situation the Lockwood Committee will delve deeply into the attitude of the insurance companies and the banks regarding real estate mortgages.

Mr. Untermeyer has blamed these financial institutions for being largely responsible for the present housing crisis by their refusal to lend money for construction purposes. The charge has been made that they have been investing their funds in speculative Wall Street securities and have refused to aid in stimulating housing construction by making mortgage loans.

Plumbing and heating contractors are particularly interested in this phase of the investigation because they believe that the withdrawal of capital from real estate mortgages has been the main cause of the halt in residential construction, and that the return of this capital would be the signal for a resumption of housing operations in proportion to the volume of the flow.

Irrespective of what the Lockwood Committee may be able to accomplish in this direction, there have been encouraging indications recently that mortgage money is becoming more plentiful. Home builders in many sections became aware of new mortgage resources available for their operations during the past week.

The Metropolitan Life Insurance Co. has announced the authorization of 387 separate loans, aggregating $2,500,000 for housing projects in various sections. Other financial institutions are said to be about to follow suit. In fact, one banking authority has gone on record to the effect that within a

few months $555,000,000 will be available for mortgage loans in the metropolitan district. According to this authority the banks are preparing to open up their vaults in an effort to speed up housing construction.

"The mortgage situation as an essential part of building operations must improve," said Vice-President Frank J. Parsons, of the United States Mortgage & Trust Co., "and the most hopeful sign is the increasing construction of workmen's cottages and homes of smaller types. The transportation situation also is improving. Speaking generally, there is no substantial shortage of labor or of raw material used in building. It is mainly a question of confidence and an adequate return for capital. Of course, mortgage money is entitled to a higher rate than borrowers have been in the habit of paying. The sooner they realize this and accept it as a settled condition the sooner will the supply of such capital return in volume adequate to current needs."

Some realty operators are convinced that the housing crisis is passed and that the situation has already begun to right itself. They say the readjustment to normal will be steady and increasingly effective, if it is allowed to take a natural course. As to the construction of homes, there are plenty of small private dwellings under way, and projected, they say, and these can be accelerated into an oversupply by co-operation of the board of estimate in exempting those started during the next two years from all tax burdens for a decade. But the real need is for flats—enough to house 30,000 families at a cost of $300,000,000. Builders say tax exemption would stimulate such operations a little but nowhere near enough to produce the needed volume. The only effective local remedy seems to lie in an expansion of the state land bank by means of a department authorized to make mortgage loans of the large size required for such big projects, the capital to be raised by the bank through the medium of its own bonds issued against the aggregate of mortgages covering flat-building operations, deposited in its vaults as collateral.

Massachusetts

New Bedford.

Bids for plumbing and heating and other sub-contracts for two 20-room schoolhouses to be erected by the city of New Bedford were opened recently. The lowest bid for the heating was $47,397 for each building, by M. A. Dame & Sons Co., of Lynn; and for the plumbing $26,974 for each building, also by the Dame firm. The building committee which received the proposals voted to recommend the bids of the Dame Company to the firms bidding on the general contract. The complete list of bidders follows.

Heating.

M. A. Dame & Sons Co., Lynn (Each school)	$47,397
J. J. Hurley Co., Boston (Rochambeau St. School)	47,923
Power Heating and Ventilating Co., Boston (Each)	49,800
James N. Conway, New Bedford, (Mt. Pleasant School)	51,011
Cleghorn Company, Boston (Each school)	54,770
J. P. Dwyer Co., Boston (Each school)	59,777
E. Ziellan Co., New Bedford (Each school)	60,250

Plumbing.

M. A. Dame & Sons Co., Lynn (Each school)	$26,974
William D. Hamel, New Bedford (Rochambeau St. Bld.)	32,406
George J. Allen, New Bedford (Rochambeau Street)	32,677
George J. Allen, New Bedford (Mt. Pleasant School)	32,475
E. Ziellan Co., New Bedford (Rochambeau Street)	33,350
E. Ziellan Co., New Bedford (Mt. Pleasant)	33,700

W. H. Armstrong, of Cliftondale, has the contract for plumbing and heating in connection with the remodelling of a house at Newtonville for William Hayden. The house will be made into a three-family dwelling.

Charles Abbott is building a $20,000 brick residence at Newton and has placed the plumbing contract with Thompson & Spear, of Boston.

Wood, Brightman & Co., of New Bedford, have the contract for plumbing and heating in a warehouse in that city being altered for Silas Pierce & Co.

R. J. Webb, of Huntington Avenue, Boston, has the contract for installing plumbing and heating in a residence.

The Broadway Theatre at 420 Broadway, Chelsea, is being remodelled and enlarged at a cost of $10,000, George H. Priggin Co., of Boston, has the ventilating contract.

20 Years Of Knowing How
Quality
Service
Plumbers' Cast Iron Specialties—Cess Pools, Boiler Stands, Trap Screws, Ferrules, Drum, Traps, etc.
Satisfaction guaranteed with every order.
The Rabe Pipe & Foundry Co. Inc.
Chattanooga, Tenn.

ONE-WEEK DELIVERY
ON
Chicago Condensation Pumps and Receivers

The safest and surest Condensation Pump on the market. Catalog 25 will explain why.

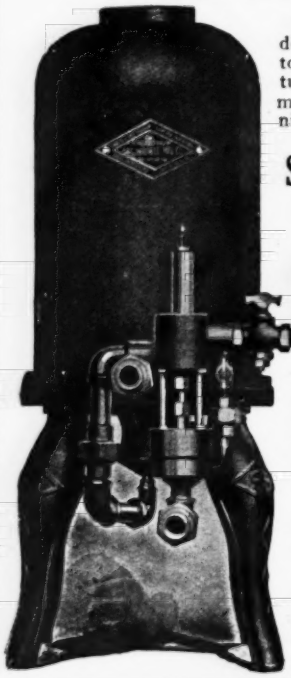
The ENTIRE HEATING PLANT depends on the pump, therefore select the safest. The Chicago Condensation Pump is the first self-contained unit placed on the market and is still in the lead.

CHICAGO PUMP CO.
2322 WOLFRAM ST. **CHICAGO**

Manufacturers of
BILGE PUMPS, SEWAGE EJECTORS, TURBINE HOUSE CIRCULATING PUMPS

Chicago Condensation Pump and Receiver.

Something New and Better



Water, any temperature desired—from lukewarm to steaming hot—at the turn of the faucet, with minimum cost, is furnished by the

S-S Instantaneous Water Heater

(Gas and Electric)

This heater possesses many advantages heretofore unknown in a heater. So simply and sturdily built that it cannot fail to operate properly. Eliminates thermostat, thereby reducing gas consumption about 30%.

If you fail to investigate the S-S Heater you are passing up a good thing. Write today.

Milwaukee Mfg. Co.
1316 Fond du Lac Ave.
Milwaukee, Wis.

EXCELLO SPECIAL PATENTED BOILER STAND

(Solid)

Something new. Try them, and be convinced as to their handy application to the boiler. Manufactured under Anderson's patents.

(Split)

Nipple and fitting can be screwed in while boiler is on its side, then the stand put around the fittings and bolted together. It is easily upended without lifting the entire boiler bodily onto the stand.

No strain whatever on the bushing of the boiler, because fittings are not a part of the stand. Entire weight is on the stand only.

Right in price.

The Cooper Foundry Company
Atchison, Kansas

The Fall River Steam and Gas Piping Co., of Fall River, has the contract for the plumbing in a $300,000 addition to the No. 2 mill of the Lincoln Manufacturing Company in that city. The heating and sprinkler contracts have not yet been awarded.

St. Francis Lithuanian Church of Athol is erecting a new church building to cost about $50,000 and has awarded the plumbing contract to J. Fitzgerald, of Springfield.

Work has been started on a parish house for Grace Episcopal church at Lawrence, which is to cost $60,000. The Bride Grimes Co., a local concern, has the heating contract.

The Hobson Lawlor Co., of Lowell, has the contract for the heating, and Thomas E. O'Day, of Lowell, that for the plumbing in connection with alterations to the Salvation Army Industrial Home in that city.

The city property committee of Springfield has approved plans for a new junior high school building in that city and for a new heating system in the present central high school building. The old boilers in the central building have been in service for 24 years. The cost of replacing the system will be about $20,000 more than had been estimated.

C. P. Hooper, of Hingham, has the contract for plumbing and heating in connection with the remodeling of the residence of Fred S. Richards on Leavitt and Main Streets, Hingham.

South Dakota

Brookings.

Marvin & Co. are finishing the plumbing in six nice residences.

Rio Miner is doing the plumbing and heating in the new First National Bank Building.

South Dakota State College of Agriculture is constructing a new dormitory building. Figures on plumbing and heating were called for last week.

Bonds have just been voted and passed to erect a new consolidated ten-room modern school between Flandreau and Egan, South Dakota.

Huron.

Many buildings are being erected in this city.

The Elks are building a new seven-story fireproof concrete hotel and club building.

Beadle County Commissioners have received bids on new County Court House.

E. A. Pugsley has the plumbing contracts on three fine residences.

A. N. Anderson is working on the plumbing and heating in the new Methodist Church.

Redfield.

A. I. Olding is busy with heating work in Doland, S. Dak., and many residences in Redfield.

Watertown.

The Watertown Plumbing & Heating Co. has a number of plumbing and heating contracts, including one twenty-six apartment building.

J. B. Kintsley is completing the plumbing in several residences.

New work here is coming up slowly due, no doubt, to the slowness and apathy shown by the farmers in selling their grain this fall.

Madison.

R. B. Fitzgerald and E. L. Biederstadt are both busy on plumbing work.

R. H. Mayfield has the plumbing contract on the new city school at Howard.

Sioux Falls.

Architect George E. Hugill has received bids and awarded the general contract for a new $40,000 grade school building. Bids on plumbing and heating are to be asked for about November 1st.

Plumbing work on the Y. M. C. A. and Columbus College buildings is progressing very rapidly. C. Carlson Plumbing & Heating Co. and the Sanitary Plumbing & Heating Co. are doing the plumbing and heating respectively.

The water company has let the contract for another new well which is to cost $16,000.

Oregon

D. D. Phelps, Pendleton, has the plumbing and heating contracts on the Elles-Schiller garage, the L. L. Rogers and the B. Swimmerton residences, the plumbing on the new Elks home and William Shannon's residence, and the heating on the Alexander department store, the Reith high school and the Pacific Telephone office building.

Anderson Bros., 1105 Adams Avenue, La Grande, have the contracts for remodeling the plumbing and heating in seven residences and three business houses in that city.

Fish & Bowen, Baker, have secured the plumbing and heating contracts on the Somner Building, the Baker high school, and a hotel and houses for the Oregon Lumber Co., of Baker, at Bates, Ore. The firm will also install heating systems in the Baker court house and the Baker Natatorium.

John Melville, La Grande, has secured several heating and plumbing contracts on business and residence property in that city. Mr. Melville has recently enlarged his plumbing, heating and sheet metal department.

California

San Francisco and Vicinity.

Though building is rather slack at present, the contract figures for the month of September show a slight increase over those of August, and it is hoped that the settlement of the election next month will have a beneficial effect on business in general. If the money situation also eases up, there will be more building than has been seen for many years past, is the opinion of local builders. Home building is increasing. Restricted operations over a long period of time has cut the supply of homes to a minimum, with the result that there is a great demand for proper housing in San Francisco. Now that the building trades' strikes have been called off and special provision has been made to ease the railroad situation with reference to building materials, the construction work under way runs into millions.

One of the large buildings to be erected soon is a six-story, class A men's club house to be built near the Civic Center. The estimated cost is $500,000. Plans call for a swimming pool.

Monson Bros. have been awarded the contract for all work, including plumbing, on a three-story reinforced concrete building on South Clay Street. The contract price is $37,475.

The contract for all the work on a one-story and basement class C building on N. E. Pacific and Front Streets, including plumbing, sewering, and electric wiring, has been let to J. Martinelli for $23,950.

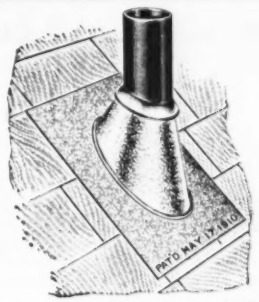
Canada

PROVINCE OF QUEBEC.

Montreal.

Although the strike of plumbers still continues, the members of the Master Plumbers' Association state that they find no difficulty whatever in getting men, in sufficient numbers, for the work they have on hand, and with the special arrangements which the association has made, for the interchange of workers in case of emergency, they do not fear any inconvenience.

The Catholic and National Syndicate challenges in one of the French papers the statement made by the secretary of the striking local No. 144 to the effect that the members of the C. and N. were only being paid 65 cents an hour. "This is false," says their statement. "Our contract with the masters was observed to the letter, and we are receiving 75 cents an hour, not 65 cents as the statement of local 144 says. We have had the 75 cent rate for a long time, but have not announced it in the press, as we are not in need of publicity."



Don't Be Content
With Ordinary Roof Flashings

Specify and Use the Reliable
"SIMPLEX"
Made in
All Lead—Copper—Galvanized Iron
Every Flashing Adjustable
Every Flashing Perfect

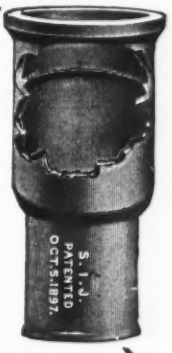
Manufactured only by
Simplex Mfg. Company
313 S. Clinton St. Chicago

SISSON
Insertable Joint

is indispensable to plumbers for connecting up new fixtures to soil pipe, or for use where a defective length or cracked fitting must be taken out.

Saves springing stack and removing whole lengths of pipe.

You cannot afford to get along without the SISSON. Ask for prices and particulars.



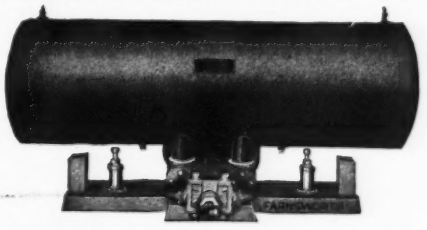
R. ESTABROOK'S SONS, 1st and C Sts. South Boston, Mass

PLUMBERS, BIG PROFITS!

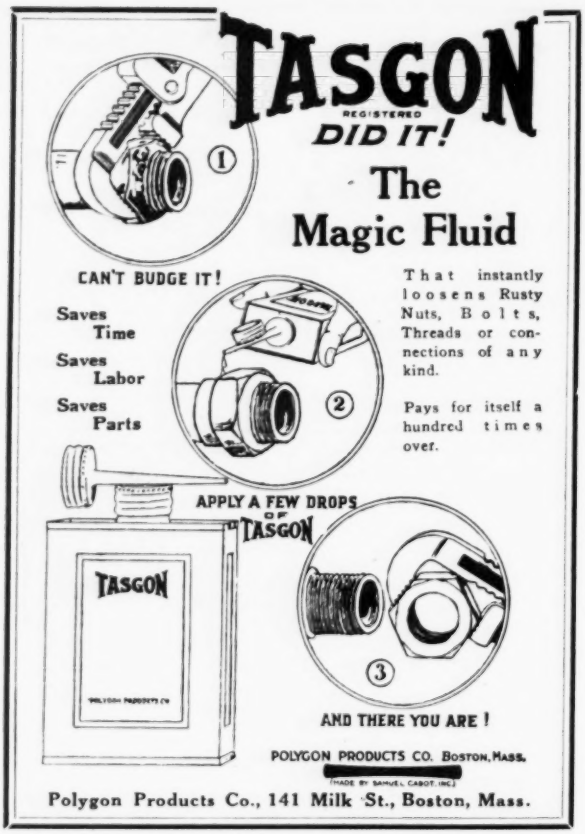
You can make big profits without any added effort on your part. Plumbers everywhere are taking advantage of our Plumber proposition—the best that any plumber ever had offered him in the selling of automatic heaters. Pays big—and creates jobs besides. Write us about it today. Don't wait. It means money. NOW'S the time.

PARROTT HEATER COMPANY
224 21st STREET DETROIT, MICH.

This Farnsworth Duplex Boiler Feeder Saves Coal



"The greatest coal saver ever offered the steam plant."
FARNSWORTH CO. Conshohocken, Pa.
Engineers and Manufacturers of Condensation Pumps



KENNEDY Radiator Valves

Made in bronze with solid wedge disc, stationary stem, and wood wheel. Pressure either low or up to 150 pounds water or 125 pounds steam. Size ¼ to 2-inch. Can be furnished with Lock Shield and Key instead of Wood Wheel.

Because of the wide range in which Kennedy Valves are made—500 types and sizes—there is no valve requirement you may meet that Kennedy Valves will not fill.

Ask for Prices and the Kennedy Catalogue

THE KENNEDY VALVE MFG. CO. ELMIRA, N.Y.

Branches: New York, 95 John St. Boston, 47 India St. Chicago, 204-8 N. Jefferson St. San Francisco, 23-25 Minna St. Sales Offices: Philadelphia, Kansas City, Salt Lake City, Seattle, Portland, Ore., El Paso, Winnipeg. Export Office: 95 John St., New York City.

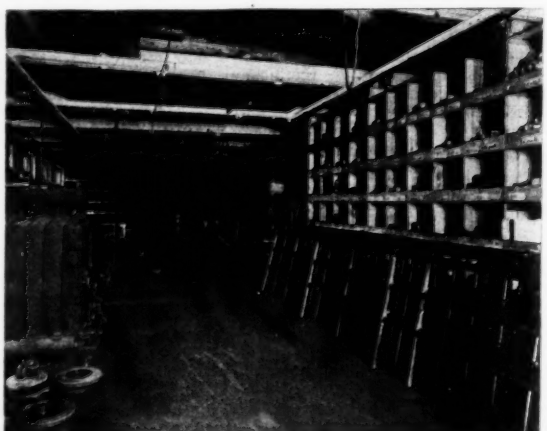
FORCE AND FORESIGHT TREBLES LARGE PLUMBING AND HEATING BUSINESS IN SHORT TIME.

(Continued from Page 154.)

because he is a master plumber employing journeymen he can come down to the office at ten o'clock and leave in the middle of the afternoon will not get, and has no right to expect, the greatest returns from his business. I am at the office at 7:30 in the morning and work until after quitting time in the afternoon, and while I am at the office I am busy every minute keeping everything moving at full speed. The work would go on if I wasn't here, but there would be a loss of five minutes here, ten minutes there, and an hour some other place, and these little items are the things that count a great deal in this kind of business, for it is one of details, a great many little details. And I think that the employer who puts in a full day himself will find it much easier to get a full day's work out of his employes."

Another reason for the success of this company is the fact that the work is well planned in advance. Nothing is done in a haphazard manner, but today's work and next week's work was carefully laid out as nearly as it was possible to do some time ago, so that when one job is completed, there is no stalling around and wasting of time in getting started on the next piece of work. A good example of this occurred some months ago. The journeymen had been out for eighteen weeks. On the morning of the day following the settlement of the strike, Mr. Weider was at the office at seven o'clock and at eight o'clock over forty men had left the shop with definite assignments of work. Some contractors spent several days and longer getting into full swing, but Mr. Weider had every move planned long before the strike ended, and consequently did not lose a minute in getting started again. The planning included also advertising copy prepared long in advance and left at the different newspaper offices ready to run the moment the strike was settled.

Advertising has played a prominent part in the success of the Barr & Creelman Co. Not only has it been a liberal user of space in the daily papers, but also resorted to advertisements on theater programs, cards in bus lines, and various



Another View of the Workshop of the Barr & Creelman Co.

other mediums. Some time ago this company inserted a notice in the newspapers that they would give valuable prizes for the best advertisements of their business. They received a great many replies and used the prize winners' advertisements in their advertising campaigns and in this way aroused considerable interest. According to Mr. Weider, the oftener a

contractor can get his firm name and business before the public, the more certain he is of not only getting new customers, but also of holding the old ones, for there are a great many people who insist on dealing with a firm that is well known whether they are getting plumbing and heating service or buying cars or clothes.

"Nothing ventured, nothing gained" is an old saying, but one which is just as true today as it ever was, and the man who is not willing to risk a great deal must be content with slower progress. During the past couple of years there has been much uncertainty as to prices and labor, and many firms hesitated in bidding on big contracts or refused altogether.

ANNOUNCING

That we are again in a position to serve our customers and friends their requirements in Plumbing and Heating.

No Job Too Large
None Too Small

No job is big enough to outreach our capacity for service. No job too small to receive our most careful attention. We have so systematized our business that all classes of work are properly served with thorough care and promptness. A postcard or phone call will bring you our expert service.

Barr & Creelman Co.

Phones 408 74 Exchange St.

The Barr & Creelman Co. studied conditions carefully, made allowance for probable increases, and when their bids were accepted drove the work through at top speed and with highest efficiency, and as a result this company trebled its business and had corresponding profits. During the period of uncertainty many builders were willing to pay a little more to a plumbing and heating contractor who was certain to have the work done at some definite time, and this company made the most of that condition. The ability to look ahead and plan intelligently, the force to carry out the plans quickly and efficiently, together with timely and persistent advertising has brought the Barr & Creelman Co. unusual success.

January 25, 26 and 27, 1921.—The annual convention of the Illinois Master Plumbers' Association, in Springfield, Ill.

January 25, 26, 27 and 28, 1921.—The annual meeting of the American Society of Heating and Ventilating Engineers. The business session of the meeting will be held in New York City, January 25th, and the professional sessions will probably be held in Philadelphia, January 26th to 28th.

Davenport, Iowa.—The Beck Plumbing & Heating Co., formerly of 1524 Washington Street, has moved its business to 1122 West Fourteenth Street.

Simplify Your Heating Jobs

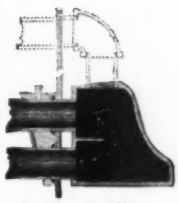
Whenever you install the "O-E" Perfect Heating System (Three in One) your customer not only gets more for his money, but the simplest, most flexible system made.

The "O-E" Perfect Air Exhauster and Vacuum Valve remains open as long as there is any air in the system, but port closes the minute any heat comes in contact with it. Always works. Cannot stick or buckle. Fool-proof.

Write for Booklet "A."

O-E SPECIALTY MANUFACTURING CO.
884 Third Street, Milwaukee, Wis., U. S. A.

Smith's "CRESCENT" Heater



Sectional View

Plenty of HOT WATER day or night. No cost for Fuel. No Gas Bills. For Steam and Water Boilers or Furnaces. Can be used in any Heater. Iron or Brass. Occupies less space. Has larger fire surface. Easier to install and will heat more water in less time than any other heater.

Three sizes: 50, 75 and 100 Gallons.

Write for Catalogues of our different Heaters.

CHARLES SMITH

65 West Lake Street CHICAGO

WILHELMI and MODERN Copper Range Boilers

Unexcelled in design, material and workmanship.

Interior thoroughly tinned.

No iron used in construction.

Guaranteed against collapse.

Always satisfactory. You can safely install them on your best jobs.

Order from your jobber. Made by

Hayes Manufacturing Co.
Paterson, N. J.

The Hessler
Adjustable
Plumbers' Roof Flange

It is the best one. Write for prices, to nearest jobber or to

H. E. HESSLER CO.
Syracuse, N. Y.

Former manufacturer of the McGuire

STERLING SYSTEMS

Vacuum and Vapor Heating Specialties

Thermostatic Traps—Air Line Valves—Graduated Supply Valves—Air Eliminators—Damper Regulators—Return Traps

STERLING ENGINEERING COMPANY

Milwaukee Wisconsin

Insurance

Against Flooded Basements

Where the Signet Drain is installed there can be no back water.

A perfectly reliable trap that automatically keeps out sewerage, gas and germs.

Pat. Dec. 8, 1914

Write for details

TRADE MARK SIGNET REG. U.S. PAT. OFF.

Always works. Nothing to get out of order. Brass working parts submerged.

The Signet is clean, sanitary, simple, durable and efficient.

CRAMPTON-FARLEY BRASS CO.

KANSAS CITY, MO.

Dependable Showers

Easily set for desired temperature

The Milwaukee Mixer

precludes all danger of scalding.

Made in a variety of designs.
Valve either exposed or concealed.
China or metal handle.
Order from your jobber.

The Milwaukee Flush Valve Co.

Valve Specialists MILWAUKEE, WIS.

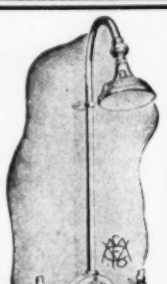


Fig. C 30

The Detroit Gas Water Heater is rapidly gaining favor among those Plumbers whose demand is for the best, the most efficient and the most economical. The Detroit is made in sizes to meet all requirements.

Detroit Heater Corporation

715-717-719 Grand River Ave. Detroit, Mich.

PRELIMINARY REPORT ON THE PROPOSED UNIFORM PLUMBING CODE FOR MASSACHUSETTS.

(Continued from Page 165.)

fixtures. For the distribution of hot water, brass pipe is commonly used in the high-grade houses, but galvanized steel is used in houses of the cheaper class, especially those built for speculation.

"The choice of metals should depend on the corrosive properties of the particular water to be distributed and a knowledge of the principles of corrosion is fundamental.

"There are two essential features which are involved in the corrosion of metal by water, the hydrogen ion and dissolved oxygen. According to the modern theories of physical chemistry, it is the hydrogen ion which is the active principle of acidity and the greater the number of hydrogen ions in water the more corrosive will the water be. This is the modern way of stating the fact that the more acid a water is, the more corrosive it is. The first point to observe is that water itself is a source of hydrogen ions. They are present even in the purest distilled water, because of a slight dissociation of the hydrogen and oxygen; hence even distilled water has a corrosive property. Water in contact with the atmosphere absorbs a certain amount of carbonic acid normally present in air and this materially increases the number of hydrogen ions and hence the corrosive property of water. Carbonic acid also results from the discomposition of organic matter; hence swampy waters contain large numbers of hydrogen ions and are therefore corrosive. Swampy waters may also contain weak organic acids as well as carbonic acid. Some waters, but these are not usually found in Massachusetts, contain mineral acids and are very corrosive to metals. Waters which contain salts which readily dissociate may also contain hydrogen ions and therefore be corrosive. Examples of these are well waters near the sea coast in which the amount of sodium chloride present is considerable.

"While the hydrogen ion is an essential factor in corrosion, the presence of oxygen is also necessary if corrosion is to proceed actively.

"In the process of corrosion the metals are first dissolved, then oxidized and precipitated from solution. The oxidation practically ceases after the amount of dissolved oxygen in the water has been exhausted. Likewise the corrosion also ceases, for only small amounts of the metal are capable of being held in solution and more metal cannot be dissolved until that already in solution is oxidized and precipitated. It is for this reason that it is better to allow the water in hot water systems to stand in the pipes during the summer, because emptying the pipes and refilling with water gives opportunity for a new supply of oxygen which permits corrosion to proceed.

"There are several factors which tend to prevent or arrest corrosion. If water is hard by reason of the presence of the carbonates and sulphate of calcium and magnesium, there is a tendency for a coating or scale of mineral matter to form on the inside of the pipes and protect the metals against corrosion. Such waters also contain hydroxyl ions, which are the chemical opponents of the hydrogen ions. Hence hot water, if sufficiently hard, does not seriously corrode even iron or steel and in hard water regions such metals are commonly used with entire satisfaction for hot water services.

"Water which contains a considerable amount of organic matter tends to deposit a slimy layer on the inside walls of the pipes and on the walls of tanks, and this also serves as a protective coating. Many of the surface waters of Massachusetts do this. Ground waters and filtered waters do not form this deposit.

"The foregoing principles warrant the following general conclusions:

"(1) Soft waters, especially if they contain carbonic acid, are more corrosive to metals than hard waters.

"(2) Colored surface waters are usually more corrosive than colorless waters of the same degree of hardness.

"(3) Ground waters are more corrosive than surface waters, partly because they generally contain larger amounts of carbonic acid and partly because they do not form a slimy layer on the walls of pipes.

"(4) Filtered waters are more corrosive than the same waters unfiltered, because they do not form slimy layers in the pipes.

"(5) Waters filtered by the process of mechanical filtration are more corrosive than waters filtered by slow sand filtration, because the use of alum increases the amount of carbonic acid in the water. (This increase in carbonic acid can be corrected by the use of lime or soda, but the former hardens the water and the latter is expensive.)

"(6) Waters which are impregnated with sea water or which have high chlorides and high nitrates due to pollution are more corrosive than waters which do not contain these salts, because of their dissociation.

"(7) Hot water is more corrosive than cold water.

"(8) In any particular case one must balance the above-mentioned factors.

"Speaking generally of the water supplies of Massachusetts, it may be said that they are relatively soft as compared with other sections of the country. Even the ground waters of the state are not excessively hard except in the Berkshire region. Many of the surface water supplies of the state are more or less colored and a few supplies near the sea coast are somewhat salty. Massachusetts, therefore, is a region where the corrosion problem is more serious than it is in the Middle States where the waters are generally hard.

"In general, brass resists corrosion better than wrought iron or steel, and this is why it is used for the distribution of the hot water in the better houses of New England. It is, of course, more expensive than iron or steel. During recent years, there have been a number of instances of the failure of hot water systems where brass pipe has been used. These have been quite common in Newton, Brookline, and other places where the water supply is derived from wells, is low in organic matter, and contains considerable amounts of carbonic acid. Examples of such corrosion have recently been brought to our attention and studied by us. Two types of corrosion have been observed. The first may be called 'joint corrosion.' This is confined to ends of threaded pipe which enter fittings. Brass is an alloy of copper and zinc, but the alloy used for the fittings contains less copper than that used for the pipe and the difference in the metals apparently results in a galvanic action which causes the brass pipe to corrode at the joint. This galvanic action naturally is most active in waters which contain hydrogen ions and dissolved oxygen as above described. The second type of corrosion may be called 'spot corrosion.' It is observed at intervals along certain pieces of pipe. The first sign is usually the appearance of a white substance on the exterior wall of the pipe, which analysis shows to consist of zinc oxide and zinc carbonate. Beneath this spot the metal shows evidence that the zinc has been dissolved from the alloy, the copper being left behind. This causes a porosity of the pipe, and corrosion sometimes proceeds to such an extent that a hole is formed through the pipe. The reason for this action is not as yet fully understood. There are two theories in regard to it. The first is that it is due to electrolysis. This theory does not appear to be upheld by the facts of the case as far as we have been able to learn them. The other theory is that it is due to some

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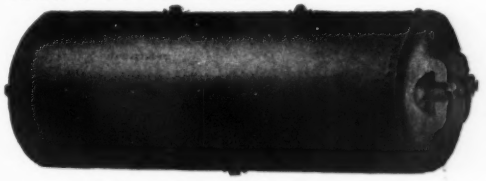
Made in a wide range of sizes and capacities.
We also make black steel and galvanized tanks for storage of hot water and gasoline.



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FOR lasting quality and true capacity use *"KOVEN"* Pure Iron, Double Row Riveted, Galvanized Range Boilers, or *NACO* Galvanized Range Boilers made of open hearth steel. These boilers may be bought of jobbers everywhere.

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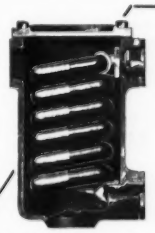

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Meets New Requirements
It means no coils in the fire-box to deaden the fire. It assures an even tank temperature whether the fire burns wild or low.

The copper coils easily removable from the Excelso. Can be connected to steam, vapor or hot water boilers; also used for heating with live steam.
Made in five sizes. When used below the water line of steam or vapor boilers, it will heat tanks of from 30 to 120 gal. capacity.
No fitter should overlook this winning proposition. May we send particulars?

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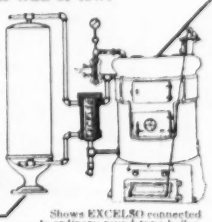
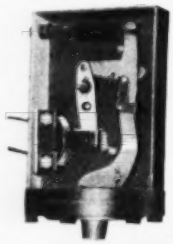


Shows EXCELSO connected to ordinary round type boiler

Penn Pressure Switches



For use on Automatic Electric House Water Systems. Standard equipment on a large percentage of popular Water Systems.

See that your next Systems are provided with Penn Switches. Our New type R Switch embodies best known practice in electrical and mechanical construction.

Send for bulletin describing in detail.

Penn Electric Machine Co.

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Something Better in Lavatory Supplies

AMERICAN Lavatory Supplies are made of highest grade brass in patterns suitable for all installations.

The AMERICAN Line includes just the Trap, Fitting or other Sanitary Specialty the plumber is looking for.

Fig. 88

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Manufacturers of Fine N. *Brass Specialties*

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CLOSET SEATS

To recommend this efficient seat means giving your customers the best the market affords.

— INDISPUTABLE QUALITY
— IMPERVIOUS — ACID PROOF
— Types for all regular bowls.

Ask your jobber or Seat Dept.

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Here's Your New Catalog, Mr. Plumber

Send for It Quick!

We have never issued anything nearly as valuable to you as this NEW CATALOG OF PAUL SYSTEMS OF WATER SUPPLY.

And it's for YOU. All you have to do is to ask for it and we'll be more than glad to send it to you post-haste. Full of illustrations and selling information, covering everything you want to know about these popular water systems.

Ft. Wayne Engineering & Mfg. Co.
1718 N. Harrison St.
FORT WAYNE, INDIANA

irregularity in the metal, either physical or chemical, which causes local galvanic currents to be set up, an acid condition of the water making this action possible. These currents result in what may be called auto-electrolysis which brings about corrosion. This theory has not been fully elaborated, but it is upheld by the observed correlation between the occurrence of corrosion and the character of the water when it takes place.

"Auto-electrolysis is then in its nature the same as the galvanic action occurring at threaded joints except that it takes place between portions of the same piece of pipe and not between a pipe and a fitting or between two pieces of pipe. Why the trouble has recently been more common than formerly has not been explained. The subject is one which needs careful investigation, and is being studied in the Sanitary Engineering Laboratory of the Harvard Engineering School.

"Inasmuch as no metals will wholly resist the action of some of the waters of Massachusetts and inasmuch as the failure of distribution systems results in considerable losses to property owners, it is evident that the subject is one which demands consideration by the authorities. It is evident that the trouble cannot be wholly prevented by choosing the best available metals for the hot water services and that greater attention should be given to the corrosive properties of the waters supplied to our cities and towns. It is a problem to be solved in part by plumbers and in part by local water works authorities.

Lead and lead lined service pipes are in common use in many places in Massachusetts. These are subjected to corrosion, although the pipes usually corrode in an even manner and seldom become leaky. The lead which is dissolved from the pipes, however, is a poison, and lead poisoning is altogether too common in our New England States. As cities are continually demanding higher standards of purity for their water supply, there is a tendency towards the use of ground waters and filtered waters in place of raw surface waters. Such waters, while advantageous from a bacterial standpoint, are likely to be somewhat more corrosive than the supplies under old conditions, and hence we are likely to have a recurrence of the lead poisoning problem, unless the question of corrosion receives proper attention."

(To be Continued.)

PUBLIC COMFORT STATIONS A STATE AND MUNICIPAL NECESSITY.

(Continued from Page 160.)

to the state board of health (or ————————) the sum of —$———— to carry out the provisions of Section 4 of this act.

Section 7.—(Penalty provision for violations or noncompliance.)

Section 8.—This act shall take effect ————————, 19—.

Note. Designating terms used in this draft may be modified to conform with the requirements of state or local governing bodies.

Laws alone will not solve the problem, which demands for its solution a right attitude by the public, guided therein and supported wholeheartedly by the local and state authorities, engineers, architects, plumbers, contractors, civic organizations, and all interested citizens.

The next installment will deal with suggested rules and regulations governing adequacy, location, design, construction, equipment, maintenance, safety and sanitation as they relate to these installations.

Boston, Mass.—John Stuart McCallum, who was formerly located in Whitman, Mass., has opened a place of business at 80 St. Stephens Street, in this city.

THE FARM WOMAN TELLS HER OWN STORY.

(Continued from Page 161.)

products is added to the housework the burden is more than the strength of the average women can bear long.

One Day with the Farm Woman.

The following description of the working schedule of a large percentage of farm women, although true to the statements of the survey, may give a somewhat exaggerated impression of hardship, unless one keeps in mind the motive back of the work of wife and mother and the compensations that come to every home maker in her round of activities for the happiness and comfort of her family. It should be noted also that the various duties mentioned as a possible part of the day's work would not all be included in any one day.

It is sunrise on a summer morning and a full day's work is facing the farm woman. Of those who answered the questionnaire about 50 per cent are up at 5 o'clock. All must rise early as the average working day is 13.12 hours at this season of the year. The men are on their way to the barn to feed the stock. Sixty-one per cent of the women after lighting the kitchen fire must go to the pump or spring, an average of 40 feet distance, to bring water for the morning meal. The tea kettle filled, the fire burning, and the hearth brushed, 81 per cent may enter the poultry yard to feed the birds that are lustily calling for their breakfast. About 14 per cent of the women report hired help for about three and one-half months in the year. They may delegate the poultry feeding to the helper or, while 36 per cent of the women take their pails and go to the barn to assist in milking the half dozen cows (the average number), the helper may be setting the breakfast table. This meal is enjoyed by a family averaging five persons.

She Turns to After-Breakfast Tasks.

Breakfast over, the dishwashing is to be done; over 8,000 of the women answering include in this work the washing of the milk pails and 5,703 wash the separators. If there are children in the home, a pause is made in the household tasks to get them off to school; lunch must be prepared, for the district school is on an average 1½ miles distant.

The farm woman turns again to her routine duties. There is a seven-room house (average) to be set in order. A covering on the kitchen floor in 54 per cent of the homes reduces despised scrubbing. Rugs and carpets require brushing. To aid in this 24 per cent have vacuum cleaners.

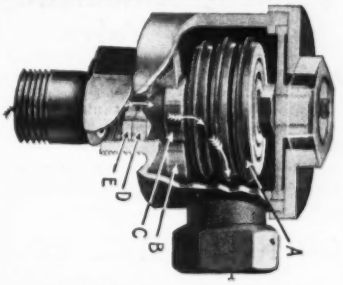
The beds are made and at least one-half hour is required for filling, trimming and cleaning the lamps in the 79 per cent of homes where lamps are used.

It is now time for some special task of the day. Ninety-four per cent of the women make part or all of the family bread, so it may be baking day; or it may be churning day, for the 60 per cent who do this work; or it may be the day for the weekly washing, done at home in 96 cases out of 100. For the 43 per cent having no washing machines, the tub, board, and boiler are brought into use, and where water must be carried, unless the man of the family brings it in, the woman must pump and carry it pail after pail, as required. Running water is found in only 32 per cent of these homes. In 48 per cent water is obtainable by some arrangement in the kitchen.

After dinner has been prepared, served and the dishes washed, the overenergetic woman may attempt some of the weekly ironing. In that event, 26 per cent will have a gas or electric iron to accomplish the task.

Part of the afternoon may be considered a time of leisure, with nothing more arduous to do than the family mending, which occupies an average of three and a half hours a week, or, as 92 per cent of the women do some or all of the family sewing, part of the afternoon may be given to that duty.

ANNOUNCEMENT!



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Boiler Se-Ment-Ol

The reliable leak-repairer for Boilers and Heating Systems. Leak-proof your new installations and fix old ones with this standard repairer.

Ask your jobber

THE NORTHWESTERN CHEMICAL CO.
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"THE CLEANER CLOSET"
Patent Pending

Made of "Castex" Whitest Vitrified China. A closet of the washdown type but infinitely better.

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GAUGE GLASS

IMMEDIATE DELIVERY
STANDARD AND HIGH PRESSURE

Our High Pressure Glasses have fused ends and are annealed by special process. Try them for highest steam pressures.

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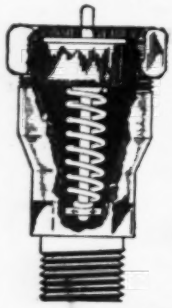

insures hot water boilers against collapse through syphonage.

Can be used on closed tanks, vats, etc., where a vacuum is likely to occur.

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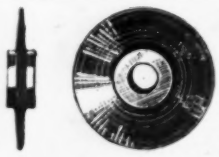

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B&B THIN BLADE PIPE CUTTER WHEEL has proved superior in service to any other wheel made. Makes a clear, clean cut without burr. Does not spread metal apart. Made of highest class tool steel scientifically tempered. Every B & B Cutter Wheel is positively guaranteed. Get one from your jobber. Test it for yourself. You'll want more.

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Cutter Wheel Specialists

Yes, It's Different

The OVERTON Adjustable Roof Flashing is in a class all its own. A special feature is the "V" which forms a metal spring. This assures a perfectly air-tight joint.

Hugs any pipe—water tight. Fits any angle. Adjusts itself without turning or twisting.

Galvanized iron or copper.

Write for descriptive matter.

Manufactured by

Duluth Corrugating & Roofing Co., Duluth, Minn.

"BRE HYGIENIC" SEAT

PATENTED DECEMBER 7, 1915

No. 213

Write for descriptive circular telling why this steel reinforced "BRE HYGIENIC" seat, open front and back is guaranteed not to come apart.

BRE Mfg. Co., Hyde Park Dist., Boston, Mass.

The program for today may not include the ironing, baking or mending, but rather a trip to town, about five miles distant, to market the eggs and butter and to bring back groceries and other supplies. An automobile is part of the equipment on 62 per cent of the farms reporting.

The End of a Busy Day.

It may be the growing season and the garden requires attention; 56 per cent of the women spend some time weeding, hoeing, and tending the vegetable and flower gardens.

It may be that by this time a child has returned from school to claim some of mother's attention. Mother also recalls a community gathering to be held that afternoon, but what single task could have been put aside to enjoy an hour with her neighbors?

"The day is dying in the west and the lowing herd" is moving toward the barnyard. So is the farm woman, who again takes her pail and spends some time in milking. The eggs from an average of 90 hens must be gathered; a pleasant duty, no doubt, for the 16 per cent of women who have the egg money for their personal use.

It is time for the evening meal. Perhaps only one man returns hungry from the field, but there may be five or six, depending on the time of year and whether the silo is to be filled, the grain thrashed, or the corn cut—work which requires an average of five additional men for at least six weeks in the year on 80 per cent of the 6,083 farms reporting. The supper dishes are again augmented by the milk pails and separator. In addition to these varied household tasks 24 per cent of the women reporting spend an average of six weeks in the year assisting with some part of the field work, and 25 per cent help to bed and feed the live stock.

Setting the sponge for tomorrow's bread baking may be among the last of the day's duties, or it may be that those who keep farm accounts (32 per cent) and home accounts (30 per cent) will get out their daybooks and ledgers and check up expenditures.

Small wonder is it when this is done if the average farm woman leaves the tempting new book or magazine unopened, postpones writing the long-delayed letter, or even forgets the bedtime story or confidence of small son or daughter as she calls this day finished, in which labor has been so sparingly balanced with leisure and recreation.

Economic Importance of the Farm Woman.

The loss to family and community by the waste of woman's energy here described could be prevented by a reasonable amount of planning and well-directed investment in modern equipment. There is much talk nowadays of the economic importance of a contented rural population willing to stay on the land and help to build it up. Perhaps the greatest factor in bringing this about will be the healthy, alert, and expert home maker, who will see to it that a part of the increased income from the farm is directed toward the improvement of the home as a means of contentment and stimuli for farm work. Economists of our country, seeing the steady migration cityward, recognizing the dearth of farm labor as a limiting factor in production, and connecting this with the isolation and convenience of rural living conditions, are pointing out that where these exist it is doubtful business policy to use increased income to buy more land with heavy interest charges against it rather than to spend part of that income in raising standards of living so that farm women may find contentment in comfortable, efficient houses, and young people will not necessarily go to the cities for attractive living conditions and amusement.

Hence the interest of the Department of Agriculture in the returns from these studies as to labor, working equipment, and compensations of the farm woman is as practical as its interest in farm studies regarding the labor, machinery, and crop returns of the farmer and for the same general reason.

The amount of time spent in household tasks could be reduced and some of the tasks eliminated if the principles of modern business were applied, and the labor and time spent on others would be lessened if the farmhouse were as well equipped as the up-to-date barn. The farmer usually considers modern farm equipment as so much currency with which to buy efficiency.

The installation of a modern lighting system would release some time in the 79 per cent of 9,830 homes where kerosene lamps are used. The initial cost would be small when weighed against convenience and comfort.

Keeping the Home Fires Burning.

Nine thousand of the seven-room houses (average) are supplied with from one to two stoves, not counting the kitchen range. These add to the daily work of 54 per cent of the rural women, who when heat is needed not only carry into the house the coal or wood to feed these stoves but, according to their statements, kindle the fires in the morning and keep the home fires burning through the day.

As power on the farm is the greatest of time and labor savers for the farmer, so power in the home is the greatest of boons to the housewife. Of the total number answering the questions, 48 per cent reported power for operating farm machinery. When we consider that it is a simple matter to connect the engine used at the farm with household equipment it seems a singular fact that but 22 per cent of the farm homes reporting have this advantage. Power for such frequently recurring tasks as churning and using the washing machine would greatly relieve the farm woman and give her a satisfying sense of modern efficiency.

Running Water in Few Farm Homes.

It is frequently stated that running water is the pivot upon which much modern convenience depends. Of those reporting but 32 per cent of the homes have running water; that means water drawn from a faucet, and implies that water may be in other rooms besides the kitchen. Forty-eight percent of the homes have water in the kitchen only; this means a pump or possibly a rubber hose attached to a barrel located inside or outside of the kitchen. However, in 60 per cent of the homes there is a sink with drain, even though in many cases the water used at the sink has to be carried into the house by the pailful. In 61 per cent of the homes into which the water must be carried, this work is done by women. Of 6,784 women answering the question, 20 per cent have bathrooms in their homes. The state ranking highest reported 48 per cent and the one ranking lowest 3 per cent of homes having bathtubs.

The Rural Health Problem.

Fortunate is the farm family whose members know the rudiments of caring for the sick and have an emergency kit fitted up and at hand.

According to the figures in the survey, the average farm home is more than 5½ miles from the family doctor, nearly 12 miles from a trained nurse, and about 14 miles from a hospital. These distances are shortest in the eastern section and longest in the western section. This means that even though the farm home be provided with an automobile and a telephone, the farm family may be obliged to act unaided in case of sickness, child birth, or serious accident, and that its members perhaps need more than ordinary training to prepare them for such exigencies.

Along with proper nutrition, clothing, and exercise, sanitary conditions have an important bearing on the health of children and adults on the farm. On the basis of 9,580 reports, 90 per cent of rural homes still have an outdoor toilet. Only 20 per cent (6,784 answering) have bathtubs, and this does not necessarily imply hot water in connection.

One Modernized Farm Home.

A few instances are here given to show the methods used and results secured through the partnership of the house-

ECONOMY EFFICIENCY

This is a
Pierce Down Draft, Magazine Feed, Smoke Consuming, Heating Boiler
Saves Fuel Labor

Manufactured only by
PIERCE, BUTLER & PIERCE MANUFACTURING CORP.
Brooklyn Boston Worcester NEW YORK Detroit Syracuse Newark Philadelphia Baltimore Washington

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Closet Tank fittings are not the cheapest and are used by Manufacturers who want the best.

LOOK IN THE TANK

Ballcocks, Flush Valves, Hinges, Flush Levers, Etc.

Morency - Van Buren Mfg. Co.
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Snow Flexible Gasket

Meets the requirements of plumbing ordinances. Will not endanger cracking bowls when screwing down the bolts. Absolutely tight joint. *Ask your jobber.*

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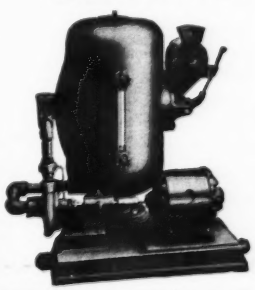
For Low Pressure and Vapor Heating Systems



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Electric Motor Driven
60 Standard Units
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Many Specials

Obtain absolute protection against overloading and burning-out of motor by using "ADVANCE" Condensation Pump and Receiver Equipment.
Write now for Bulletin D-E-205.

ADVANCE PUMP & COMPRESSOR CO.
Battle Creek, Mich.

THE "S & K" RAINBOW SHAMPOO FIXTURE

A high grade fixture in every respect. Low price permits its use on any job.

Furnished complete with hose and sprinkler.

In ordering specify distance from center of cock holes.

Write for prices and details of the complete "S & K Line."

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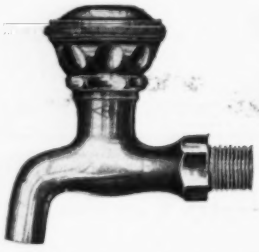

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are high grade, insuring maximum service and minimum expense
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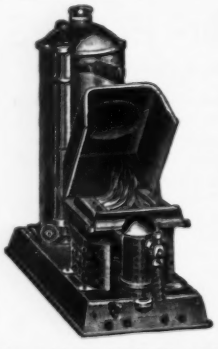

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Mechanics who use DOUBLE BLAST Gasoline Fire Pots know that the maximum amount of heat can be obtained from the minimum amount of fuel, by using a DOUBLE BLAST.

The letters of the words, "DOUBLE BLAST," aptly represent many important and superior points in the construction and operation of the DOUBLE BLAST. Read them over.

Double Burners	Best
Odorless	Labor Savers
Unrivaled	Aluminum Bronzed
Blue Flame	Safety
Lasting	Time Savers
Economical	

Leading jobbers handle them. If your jobber does not handle them, send us your order and we will ship direct. Additional information and circulars will be furnished upon application.

No. 25 DOUBLE BLAST

Double Blast Mfg. Co.
20th and State Sts. NORTH CHICAGO, ILL.

wife, the home demonstration agent, and the home-economics specialist in solving some of the live problems pointed out in this survey.

A large family lived in a small house on a prosperous farm; little thought had been given to the expenditure of any part of the farm income for home convenience. One day the mother in this home mentioned to the home-demonstration agent that it was difficult to keep the kitchen in order when all members of the family used it as a place to "wash-up." The agent suggested the possibility of a washroom with water piped into it. The farmer and his wife became interested. A carpenter was called in to make plans, and before he had finished his work a screened porch was added. The washroom later developed into a bathroom complete with modern fixtures. A few more timely remarks brought forth a new water front on the range and hot-water tank and sink in the kitchen. About this time there was an item in the farm-bureau column of the local paper regarding convenient kitchen arrangement. Following its suggestions, this home maker put blocks under her kitchen table to save bending when at work and moved the cupboard nearer the stove to lessen steps. Later a power washing machine was bought and a washhouse built. The milk separator was moved out of the kitchen into the washhouse. This home maker was so delighted with her transformed workshop that she called in the neighbors to see it, and as a result five more women rearranged their kitchens. Two put water in the house and three are now planning to purchase power washers.

SANITARY DRINKING CUPS LONG KNOWN TO THE ARABS.

Efficiency engineers and experts on sanitation, like young Lochinvar, usually come out of the West, but once in a while something will crop up in the passing show of this little planet which proves that other sections of the globe occasionally generate a germ theory.

Take for example, the sanitary drinking cup, which first made its dashing debut as a national institution, through its installation by a certain transportation system. Long before this event which revolutionized and pauperized millions of microbes, that had previously thronged and thrived in continuous carnival on the edge of the popular tin dipper or common drinking cup, the Arab tribes of the Algerian Sahara were practicing prophylaxis by carrying their own water vessels. No matter how great his thirst, or how far it might be to the next oasis, the Arab who had come off without his own individual drinking cup, or gourd, passed by on the other side of the public substitute for that necessity.

Another precaution against disease which the modern health expert extols has also been known to and practiced by the Arabs for generations. Every Arab, beneath the heavy head dress which protects him from sunstroke, wears a poll as clean shaven as possible.

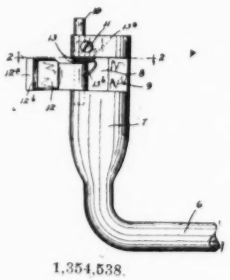
The Arabs believe in the ounce of prevention treatment, and are quick to follow the lead of those whom they trust and defer to in matters of public health. Evidence of this amenableness to teaching is shown in the recent request of the Marabout of Temassine that the American Red Cross, which has been waging a campaign against disease and famine throughout the Near East and Holy Land, send a relief mission into his country to help the children. A percentage of ninety per cent of these dark-skinned little ones are suffering from an epidemic of granular trachoma, which has recently made its appearance in Northern Africa. European as well as native children are susceptible to the disease, though adults are said to be more or less immune. Fully one-half of its little victims are left totally or partly blind, from the after-effects of the malady.

Patents

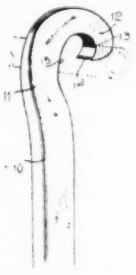
Heating Department.

1,354,538. Pipe Wrench. Francis A. Devereaux, International Falls, Minn., assignor of one-fourth to Frank H. Keyes and one-half to Herman Koeneke, International Falls, Minn. An internal pipe wrench comprising a head insertible into the pipe, the said head having a notch and an eccentric pivot pin extending into said notch, and a dog pivoted on said pivot pin for movement from one side to the other of a line that intersects the axis of the head and pivot pin.

1,354,722. Pipe Wrench. Ezra Bowen, Berkeley, Calif. A pipe wrench comprising a single shank bent at one end to form a hook, the extremity of the hook extending inwardly toward the shank and being formed with a toothed biting edge.

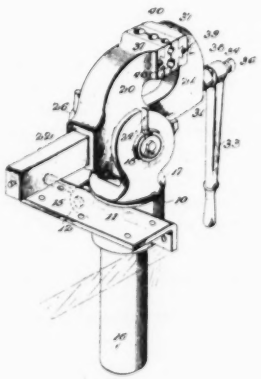


1,354,538.



1,354,722.

1,354,991. Vise. Edward A. Minor, Rock Island, Ill. A vise including a stock provided with yoke plates having slots therein, coacting operatively connected jaws one provided with trunnions removably engaging in said slots for pivotally supporting both of the jaws, and coacting means carried by the trunnions and said plates respectively locking the trunnions within the slots.



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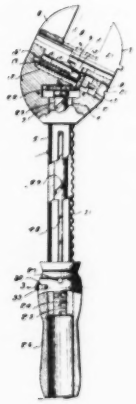

1,354,782.

1,354,782. Wrench. Guido F. Schlote, Independence, Mo., assignor to Jiffy Automatic Wrench Corporation, Independence, Mo., a corporation of Missouri. A wrench comprising a shank provided with a plurality of teeth, a relatively movable and a relatively stationary jaw carried by the forward end of the shank, means carried by the shank and operable to adjust the movable jaw with relation to the

MARVEL

Detroit Marvel Brass Mfg. Co.
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Non-syphon Sink Traps
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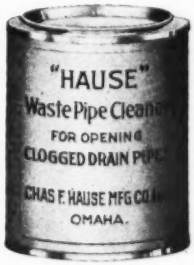

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Put up under the jobbers' own labels

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"CROWN" Post Pipe Vise
Holds Tight and Firm Anywhere

Can be attached to any wood or iron, round or square post, pole or tree.

Jaws of best tool steel, hardened and drawn. Will not crush or allow pipe to slip. Made in two sizes.

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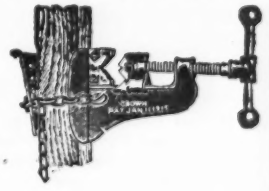

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For all types of heating boilers

Eliminates Cracking of Sections and Explosions

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can be described in one word—
Everlasting
They not only *last* but give continuous satisfactory service.
Made in any size, pressure or capacity desired.
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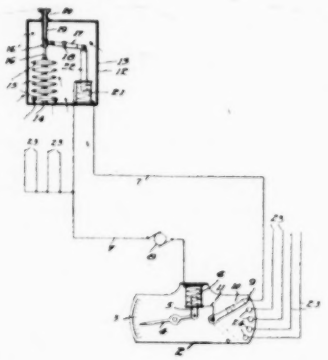
stationary jaw, a hand grip movable forwardly on the shank to decrease the effective leverage of the tool and rearwardly thereof to increase the effective leverage of the tool and connected to said means to effect an adjustment of the movable jaw in the direction of the stationary jaw when moved forwardly on the shank and to effect an adjustment of the movable jaw in the reverse direction when moved rearwardly on the shank, and an element carried by the hand grip and cooperating with said teeth to lock the hand grip in adjusted position upon the shank.

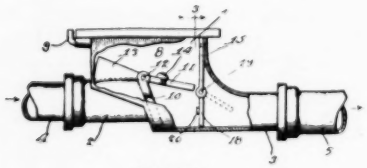


1,355,041.

1,355,041. Heat Regulator. Lee H. Harlow, Galesburg, Ill., assignor to Minneapolis Heat Regulator Co., Minneapolis, Minn., a corporation. A heat regulator comprising an indicating device having a solenoid coil and an indicator hand connected with the armature thereof, an alternating electric circuit for said coil, a series of branch circuits and a switch therefor, thermostats for said circuits, each having a reactance coil and an armature therefor, and a thermostatic device connected with the armature of each thermostat reactance coil for changing the position thereof and regulating the voltage of the alernating current and causing a corresponding movement of the armature of said indicating device solenoid coil, whereby a person at the indicator by adjusting said switch can determine the temperature of any room or place where the thermostat in the circuit closed by said switch is located.

Plumbing Department.

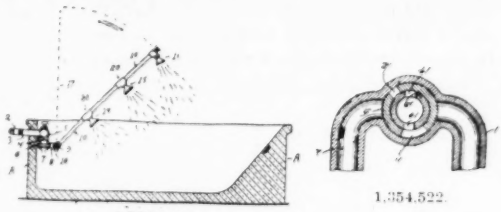
1,354,879. Backwater Trap. Harry Boland, Chicago, Ill. A device of the character described including in combination a casing having an inlet connection and an outlet connection, a valve seat for said inlet connection and a balanced valve for said seat, a partition extending across the casing adjacent the outlet connection, part of said partition being movable in the direction of discharge flow only.



1,354,879.

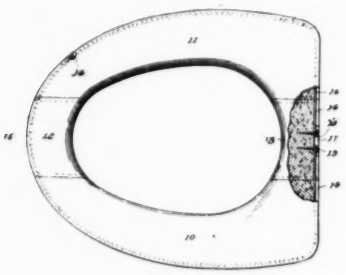
1,354,838. Bath Shower Attachment. Joseph G. Perkins, Bellevue, Ky., assignor to Isidor J. Miller, Cincinnati, Ohio. A shower apparatus comprising a shower tube, a T-shaped coupling member therein having an internal valve seat opposite the middle port of said coupling member, and a shower member having a tubular shank threaded into the middle orifice of said coupling member and provided with a valve to engage said interior valve seat to selectively close the

water supply passage to said shower member without closing the passage from one end port of said coupling member to its other end port.



1,354,838. 1,354,522.

1,354,522. Faucet. Emil Takala, Leadville, Colo. In combination with water pipes disposed in a common horizontal plane and having a capped jacket connection provided with a discharge outlet, said jacket connection and water pipes being intercommunicating, a vertically disposed rotary plug arranged in said jacket and formed with a large and a small perforation, said plug perforations being adapted to register jointly with said water pipes, or one of said plug perforations being adapted to register singly with one of said water pipes, a handle for said plug, a second rotary plug arranged within said first named plug and formed with oppositely disposed perforations adapted to register singly with the large perforation in said first named plug or jointly with said large and small perforations, and a handle for said plug.



1,354,496.

1,354,496. Toilet Seat. Leon Lemberg, Brooklyn, N. Y. A toilet seat consisting of a frame formed of sections and having a shallow peripheral groove entirely therearound, a wire for binding the seat sections together arranged within said groove and having loops at its ends spaced slightly apart and flatly engaging one section of the seat, said groove having a portion enlarged laterally for snugly accommodating the end loops of the wire to prevent the opening of said loops, and an anchoring screw engaging each loop and screwed into said one section of the seat.

Dow, Jones & Co., New York, have compiled a tabulation showing the growth of 139 industrial companies over a period of 5 years, from 1915 to 1919, inclusive. This number of industrial companies, based upon the last annual reports, shows a combined working capital of $4,387,347,450, compared with $1,921,425,649 at the close of 1914.

Chairman Benson of the Shipping Board said in an address on "Our Merchant Marine," in Chicago recently, that a resumé of activities of the Shipping Board vessels shows that during the fiscal year these vessels carried exports of 13,379,234 tons and imports of 7,236,168 tons a total of 20,615,402 tons, through 49 United States ports. In this connection it is noted that 24 per cent (1,720,733 tons) of imports consisted of crude petroleum. The exports were forwarded from 44 ports and imports were received at 31 ports. Twenty-six of these ports handled over 97 per cent (20,079,574 tons) of the entire tonnage moved.

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Prator Dugger named them TABASCO because that was the hottest thing he could think of —and TABASCO Water Heaters heat water hot. It's an all steel heater that will never wear out.

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WANTED — FIRST CLASS PLUMBER, one preferred than can work on heating. Fred J. Douglass, Birmingham, Mich. 10-16-30

PLUMBERS OR COMBINATION MEN. First class mechanics only need apply. Steady work in the Sunny South where can work all winter. Open shop conditions in city which has been on open shop basis for year. Wages $10.00 per day of eight hours. Lots of work. Write or wire. Pettit-Galloway Co., 114 E. 7th St., Little Rock, Ark. 10-23 tf.

SALESMEN—MUST BE EXPERIENCED in estimating and sale of plumbing fixtures, soliciting architects and the trade. Permanent positions now open both in New York and Chicago territory.

MECHANICAL ENGINEER WITH technical education and experience in the construction of plumbing fixtures preferred. Imperial Brass Mfg. Co., Watrous Dept., 524 S. Racine Ave., Chicago. 10-16-23

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FOR SALE—PLUMBING AND HEATING establishment in city of 6,000 inhabitants. Brick building 22x80 ft. with concrete floor. Nice display room and well ventilated shop. Plate glass front, building and stock would run about $8,000. F. M. Smith, Clinton, Mo. 10-23/30

A PROSPEROUS SHOP IN CHICAGO must be given up by present owner on account of retiring. Stock limited to pipe fittings and tools in good order. This business can be shown up in every detail and requires a practical plumber for a large list of clients to continue with orders in this shop. Small capital required. Address 207 "Domestic Engineering," Chicago. 10-23

FOR SALE—ESTABLISHED PLUMBING and heating business, Southeastern Utah, County seat, having water and sewer. Large pay roll. Steady yearly business. Will invoice $4500. Investigate. Address 206, "Domestic Engineering," Chicago. 10-23/30

FOR SALE— A GOOD PAYING PLUMBing and heating business located in a manufacturing city in Southern Michigan, will give best of terms; other business requires attention of owners. Chapman & Phelps, Sturgis, Mich. 10-16-23

FOR SALE—Plumbing and heating business established 25 years, live Illinois town 13,000. Complete sewerage system, water supply, electric service, street railway. Stock in first class condition, and complete equipment including electric power pipe plant, cutting one to six inch—far below present cost. Reasonable terms. Address 204, "Domestic Engineering," Chicago. 10-16

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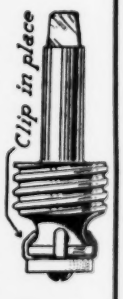
Fastens washer to spigot, ballcock, or valve where original screw is broken off or lost. Simply push ears around end of stem and screw on washer. Made of brass.

No. 1 takes ¼" to ⅝" washer. No. 2 takes ⅝" to 1" washer. No. 3 takes 1" to 1½" washer.



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